36788/C

D.E.Malone sculp.

What NATURE ſparing gives or half denies,
See! healthful INDUSTRY at large ſupplies.
See! in BRITANNIA's Lap profuſely pours,
While heaven born SCIENCE ſwells th' increasing Stores.

Ecce! ferunt Pueri Calathis Tibi Lilia plenis. VIRG.

Saml Waring 17
1:16

THE GARDENERS DICTIONARY:

CONTAINING
The Best and Newest METHODS
OF
CULTIVATING *and* IMPROVING
THE
Kitchen, Fruit, Flower Garden, *and* Nurſery;
As alſo for Performing the
Practical Parts of AGRICULTURE:
INCLUDING
The Management of VINEYARDS,
WITH THE
Methods of MAKING and PRESERVING the WINE,
According to the preſent Practice of
The moſt ſkilful Vignerons in the ſeveral Wine Countries in *Europe*.
TOGETHER WITH
DIRECTIONS for Propagating and Improving
From real Practice and Experience,
ALL SORTS OF TIMBER TREES.

THE SEVENTH EDITION,
REVISED and ALTERED according to the lateſt System of BOTANY,
AND EMBELLISHED WITH
Several COPPER-PLATES, which were not in the former Editions.

By PHILIP MILLER, F. R. S.
Gardener to the Worſhipful Company of Apothecaries, at their Botanick Garden
in *Chelſea*, and Member of the Botanick Academy at *Florence*.

. . . *Digna manet divini gloria ruris.* Virg. Georg.

VOLUME I.

DUBLIN:
Printed for George and Alexander Ewing, at the *Angel* and *Bible* in *Dame-ſtreet.*
M. DCC. LXIV.

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To the RIGHT HONOURABLE

HUGH PERCY SMITHSON,

EARL OF NORTHUMBERLAND,

Lord WARKWORTH of Warkworth Caſtle,

Lord Lieutenant General and General Governor of IRELAND,

Lord Lieutenant and Cuſtos Rotulorum of the Counties of MIDDLESEX and NORTHUMBERLAND,

Knight of the Moſt Noble Order of the GARTER,

FELLOW OF THE ROYAL SOCIETY,

And one of the Lords of His MAJESTY's Moſt Honourable Privy-Council,

MY LORD,

YOUR Lordſhip's favourable Reception of the former Edition of this Work, and the kind Hints and Inſtructions which You have been ſo good as to communicate to me, for the Improvement of it in this Edition, have laid me under the higheſt Obligations to Your Lordſhip, and demand this publick Acknowledgement of Your diſtinguiſhing Favour.

If, in the Execution, I have been ſo happy as to merit Your Lordſhip's Approbation, I ſhall have the leſs Doubt of that of the Publick; knowing the juſt Regard which the moſt Skilful in this uſeful Branch of Science pay to Your Lordſhip's Judgement, and to Your Genius for Improvements, demonſtrated ſo happily upon Your own Eſtates. I am,

My good Lord,

With equal Reſpect and Gratitude,

Your Lordship's

Moſt Faithful and

Obedient Humble Servant,

Philip Miller.

P R E F A C E

To the New LONDON EDITION.

THIS Edition of the *Gardeners Dictionary*, having been publiſhed in Numbers weekly, the Publick is already acquainted with the Nature of the Performance, and of Conſequence it is the leſs neceſſary to enlarge on that Subject here; but as the Bulk has exceeded what was at firſt propoſed, the Purchaſers have a Right to be informed how this has happened.

The Plan, upon which the Computation was at firſt made, contained only one *Latin* and an *Engliſh* Title to each Plant, as in the former Editions; but when the firſt Number was publiſhed, the Author was favoured with ſeveral Letters, repreſenting, that as the new Syſtem of Botany, publiſhed by Dr. *Linnæus*, was now more generally ſtudied than any other, the Titles, which he had given to the Plants, would ſoon be more known, eſpecially to young Botaniſts, and probably be preferred to any other: They therefore wiſhed the Author would adopt thoſe Names; which, they were ſure, would render the Work more complete.

When this Alteration was agreed upon, it became neceſſary to add to the new Titles of the Plants, thoſe which had been applied to them in the former Editions of the Book, for the Benefit of ſuch as were poſſeſſed of any of them, as alſo for the better aſcertaining the Plants to which the new Titles were applied.

This Alteration made a very conſiderable Addition to each Article.

Soon after this, the Author received Letters from the Purchaſers, requeſting that the Plan might be yet farther enlarged, by adding ſhort Deſcriptions to each Plant, which, they repreſented, would be expected in a Work of this Nature, and without it, would ſuppoſe it imperfect: They therefore wiſhed it to be performed, and they repreſented, that though theſe Additions ſhould ſwell the Work to a greater Bulk than was at firſt propoſed, yet the Generality of the Purchaſers would be better pleaſed, than if it was omitted. Upon repeated Repreſentations of this Kind, the Author conſulted ſome of his Friends, upon whoſe Judgment he could depend, and they gave it as their Opinion, that it would be right to comply with theſe Requeſts, as, by ſo doing, the Work would be rendered as completely uſeful, as could be expected in a Performance of this Nature.

Theſe were the Motives which induced the Author to add to his original Plan, which has ſwelled the Work beyond his firſt Intentions, and, he hopes, they will prove ſatisfactory to all his judicious and candid Readers.

In this Edition are included moſt of the Plants that have of late been introduced from foreign Countries; but ſuch of them only are enumerated, as the Author is well acquainted with, and has had Opportunities of examining their Flowers; for, as there are ſeveral already here, which have not ſhewn their Flowers as yet, there may probably be ſome few more of ſuch already in the *Engliſh* Gardens, than are to be found taken Notice of in this Work: But there can be but few of theſe; for the Author preſumes to ſay, that his Situation and extenſive Correſpondences have given him ſuch Advantages of knowing the Plants which are annually introduced, as few can boaſt of in *Europe*. And here it is but doing Juſtice to the Work, to obſerve, that the Deſcriptions given of the Plants are not copied from Books, but are taken from Nature: The far greater Number are from the growing Plants, which the Author has under his Care, and the others are from dried Samples, which are well preſerved; of which he has, perhaps, as large a Collection as can be found in the Poſſeſſion of any private Perſon.

Many Plants are alſo omitted in this Edition, which were enumerated in ſome of the former; It is hoped that competent Judges will enter into the Reaſon for this, as ſuch will diſcern, that none but thoſe are omitted which are deemed Weeds, and are not cultivated in Gardens, and which therefore would have only added to the Bulk of the Book, and been of little Utility, had they been inſerted; while all ſuch of the *Britiſh* indigenous Plants, as are preſerved in Gardens either for Uſe or Ornament, are here included, though the Varieties of each Species are not enumerated, as they were in the former Editions. This will not be thought a Defect by the more ſkilſul Botaniſts, eſpecially as the Varieties are taken Notice of in the Deſcriptions of the Species: It would therefore have been to little Purpoſe to have enumerated all the Varieties as different Plants, as has been done by *Tournefort*, *Boerhaave*, and ſeveral other Botaniſts; for, as the Addition of theſe Varieties has been very great ſince their Time, and are continually increaſing, and, beſides, are ſeldom conſtant, it would have been endleſs to attempt the mentioning of them all.

This extraordinary Multiplication of the Varieties in Plants has induced ſome of the late Writers on Botany to attempt the reducing them to their Specifick Difference, in order to render the Science more intelligible to Students; but, as the former Botaniſts had been profuſe in their Augmentation of the Number of the Species of Plants, ſome of the Moderns have gone into the contrary Extreme, and have abridged them greatly too much. Indeed it muſt be allowed, that the aſcertaining the real ſpecifick Difference of Plants would be of great Service to the Science of Botany; but this can be no other Way done, than from long Experience in their Culture, and by conſtant Obſervations on the different Changes which ariſe from it, and the Difference of Soils and Situations in which they grow. In this Particular, the Author has had great Advantages from more than forty Years Experience; during which time he has perhaps cultivated as great a Variety of Plants as any Perſon now living; and from his own Experience of the Alterations which ariſe in Plants produced by Seeds during that time, it is, that he has attempted to determine their permanent Differences.

The Method here directed for the Culture of Plants, is alſo founded on Experience, and not deduced from Theory; in other Words, it is ſuch as the Author has found to ſucceed beſt, where-ever he has made *Trials* of it. And as he has had Opportunities of making many Experiments on their Culture in various Soils and Situations, what he has here directed on that Head is the Reſult of many Years Experience, not only of thoſe which are cultivated in Gardens, but alſo of ſuch as are cultivated in the Fields by the Plough.

The Plants, which are here propoſed to be tried in any of the *Britiſh* Dominions in *America*, are only ſuch as, there is Reaſon to believe, will ſucceed in the Places where the Experiments are deſired to be made; and they are confined to ſuch only, as may be of great Utility to the Publick, as well as of real Advantage to the Inhabitants of thoſe Countries; and ſuch only as will not ſucceed in *Britain* ſo well, as to render their Culture practicable here, and will not therefore, if they ſucceed there, interfere with the Growth or Trade of this Country; and their Conſumption being here very great, either in Dying, or for ſome other of our Manufactures, renders them worthy of Trial Abroad, and alſo of the publick Attention; for if many of thoſe Things can be produced in the *Britiſh* Colonies in *America*, which we at preſent are obliged to purchaſe from other Countries, it will not only ſecure a conſtant Supply of them genuine to our Home Manufacturers, but alſo enlarge our Commerce by an Exchange of Goods, inſtead of paying for them in Money.

The Articles of *Huſbandry*, and the Directions here given for the Propagation of Timber, are not merely theoretical, but are ſuch as from repeated Experiments have been found to ſucceed where they have been practiſed, and may be ſafely depended on: It were therefore to be wiſhed that thoſe Gentlemen, who have Inclinations for improving their Eſtates, either by the Cultivation of their Lands, or the Propagation of Timber, would make Trial of them, and not be contented with purſuing the common Methods of Practice among Farmers and others, who are too much prejudiced in Favour of their old Cuſtoms to be prevailed upon to alter them, even in thoſe Places where they have had Opportunities of being convinced, by the Succeſs of their Neighbours, of the Advantage which the new Method of Huſbandry has over the old.

In the Culture of *Corn* only, how many Abſurdities are continually practiſed; firſt, by ſowing more than ſix times the Quantity of Seed which is neceſſary for the ſame Extent of Ground; next, by feeding Sheep upon it in the Spring, eſpecially when the Blade is rank, whereby the Stalks are greatly weakened, and this occaſions thin Ears, with ſeveral other Errors of the like Nature, which we have taken notice of under the ſeveral Articles of *Avena*, *Hordeum*, *Secale*, and *Triticum*, and given Directions for a contrary Practice. And with regard to the Management of Paſtures, how very few of the practical Farmers are there, who know any Thing of the Matter, although it is one of the moſt eſſential, as alſo one of the moſt profitable, Articles of Huſbandry! For this Reaſon, we have enlarged upon this Part of Huſbandry, under the ſeveral Articles of *Graſs*, *Land*, *Paſture*, *&c.*

The Gentry in *France* have of late Years greatly intereſted themſelves in Favour of the new Method of Culture; which they are obliged to this Country for; and although they meet with many more Difficulties in carrying of it into Execution, than can attend it in this Country, yet they ſeem to be determined to overcome them all; and for their mutual Information, the Gentlemen who reſide in different Parts of the Country, have eſtabliſted a Correſpondence with *Monſieur du Hamel du Monceau*, of the Royal Academy of Sciences at *Paris*, to whom they ſend an Account of the Succeſs of all their Experiments, which are annually publiſhed for publick Benefit. This is a very laudable Scheme, and no doubt will be attended with proper Succeſs. In one of the annual Volumes publiſhed by *Monſieur du Hamel*, he takes Notice of the many Difficulties which had attended them; one of which was, their Want of a proper Set of Inſtruments for the Purpoſe: This they have now no Reaſon to complain of, ſince that Gentleman has, with indefatigable Induſtry, made ſeveral uſeful Improvements upon thoſe which were ſent from *England*: But one of the greateſt Impediments in the Way of carrying this into practice, he ſays, ariſes from the Attachment which their People have to their old Method, ſo that thoſe who are employed in the practical Parts, do whatever they can to render the Experiments unſucceſsful; yet with all the Diſadvantages which have attended their Experiments, they have conſtantly found, that the Produce of the Land has been at leaſt equal to any other which was managed in the old Way: But here he obſerves, that ſhould the Produce be no greater in the new Method of Culture than in the old, yet by ſaving ſeven Parts in eight of the Seed Corn which is annually ſown, it muſt be of great Importance to a whole Country, more eſpecially in Times of Scarcity.

The *French* are alſo equally induſtrious in their propagating Timber Trees on their extenſive waſte Lands; and have of late Years introduced a great many Species of Trees from different Parts of the World, which they are trying to naturalize to their Climate, in order to find which of them may be worthy of Propagation, either for Uſe or Beauty: But although they are ſo very intent upon increaſing their Variety of Trees and Shrubs from other Countries, yet they do not neglect the Culture of their own uſeful Timber Trees, eſpecially the Oak; for, as they ſeem to be very much in earneſt to improve and increaſe their Marine, they are purſuing ſeveral Schemes, which in Time will enable them to carry their Point. Surely then this ſhould not be neglected in *Britain*, as the Welfare of this Country principally depends on its Shipping and Commerce. But enough of this is mentioned in the Body of the Work, under the ſeveral Articles of *Timber Trees* and *Woods*; to which we refer the Reader.

It may, and I do not doubt but it will, be objected by ſome, that the Taſte for planting is now become ſo general in *England*, that there is no Likelihood of any Want of Timber here in after Ages. To this I muſt reply, that although there is a great Spirit at preſent among People of the firſt Rank for planting and beautifying their Country Seats, yet there are but few of them who aim at more than the preſent Beauty of their Parks and Gardens; and the Trees generally planted are ſuch, as they expect to make a Figure ſoon, are large when planted, and of ſuch Sorts as are of ſpeedy Growth. Not many of the Poſſeſſors, or Deſigners of theſe Plantations have any Regard to the Propagation or Increaſe of Timber; ſo that moſt of the Plantations which have been executed for thirty or forty Years paſt, have been ſo far from improving the Stock of Timber in *England*, that, on the contrary, they have forwarded its Deſtruction, by tranſplanting many Thouſands of large Trees from natural Woods, *&c.* into Parks and Gardens, for preſent Appearance; which have ſometimes lived a few Years after their Removal, but have made little or no Progreſs, and have then decayed; whereas, had they been permitted to ſtand where they grew from Seeds, they might have become good Timber Trees; and it is well known, that the Timber of tranſplanted Trees is not near ſo good for Uſe, nor is ever of ſo large a Size, as that which comes from Seed.

The Cutting down of the Oak Timber in the Spring of the Year, when the Bark will eaſily part from the Wood, as it is now generally practiſed in *England*, is alſo a very great Abſurdity; for the Sap of the Trees being at that Time in full Motion in all their Veſſels, the Timber ſoon after cutting is cracked and torn in many Places, when expoſed to the Air, and will not laſt a fourth Part of the Time, as that which is cut in Winter, when the Sap is thickened and at reſt; yet there is an Act of Parliament to oblige every one to cut their Timber at that Seaſon for the Sake of the Bark. The *French*, who have made many Emperiments to try the Duration of Timber by cutting it down at both Seaſons, having found ſo great Difference as is before mentioned, never cut down their Oaks in the Spring; but, to preſerve the Bark, it is ſtripped from the Trees in the Spring, when it will eaſily peel off, and the Trees are permitted to ſtand till the Winter following, and are then felled, by which they find the Timber as durable as if the Trees had been cut down at the ſame Seaſon, and not been barked, and hereby the Bark is alſo ſaved. This ſurely is worthy our Imitation.

The Alterations in the ſeveral Catalogues of Trees and Plants at the End of the Book were made to bring the whole into leſs Compaſs; for which Reaſon their ſpecifick Differences are not put down at full Length: The Generical Titles of each being mentioned, and the Figures added to them, denote the Species as they are ranged in the Body of the Work, which, it is hoped, will be found of equal Uſe to the Reader as by the former Method; for it is only turning to the Articles of the Genera, where they will find the deſcriptive Titles of each, and there their Culture is alſo to be found, with the Method of propagating them. The Uſe of theſe Catalogues is too great to be wholly omitted; and if they were more attended to by thoſe who ſet up for Deſigners of Gardens, *&c.* there would be fewer Abſurdities committed in the Diſpoſition of the Trees, Shrubs, and Plants; for how often do we ſee Trees of the largeſt Growth planted, where a Honeyſuckle, or ſome other low Shrub, would make a better Appearance!

In the whole of this Performance, the Author has principally aimed at rendering the Inſtructions given in it, as clear and intelligible to the Practitioners, as well as to the Learners of the Art, as poſſible: In particular, he has every where had the ſtricteſt Regard to Truth, not advancing any Thing as ſuch, but what he has been fully convinced of by his own Experience. He hopes therefore for Indulgence from the Publick for any Imperfections which may appear in the Book; ſince, in a Work of ſo great Extent, it cannot be expected to be abſolutely perfect; though, it is humbly hoped, there will not be found in it many great Faults.

Some Errours of the Preſs have accidentally crept in, occaſioned by the Author's other neceſſary Avocations, which frequently called him into the Country during the Time it was printing, and prevented his Reviſal of ſeveral of the Sheets; but theſe are moſt of them very ſlight, and may be eaſily corrected by the Reader's Pen.*

The *Gardener's Kalendar*, which was inſerted in the former Editions of this Book, is here omitted. As there have been many Editions of that Piece printed ſeparate, it is preſumed there are few Perſons without it, who have any Inclination for Gardening; it would therefore have unneceſſarily ſwelled a Work, which the Author wiſhes he could have ſtill further ſhortened; and moreover it has been obſerved to him by many of his Friends, that few Perſons would chooſe to turn over ſo large a Volume, to find in it the Articles and Inſtructions that they may have in a portable one, and as a Pocket Companion.†

If, in the Alterations and Corrections which are made in this Edition of the *Gardener's Dictionary*, the Author ſhould be ſo happy, as to have anſwered the Expectations of the Publick, he will think himſelf equally honoured and recompenſed for all his Trouble; and he begs Leave to acknowledge in the humbleſt Manner, his Obligations for the kind Reception given to his former Labours.

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* In this Edition, theſe Errors have been corrected.

† A New Edition of the *Gardeners Kalendar* much enlarged and improved by the Author, has been lately publiſhed by *G.* and *A. Ewing.*

A N

AN EXPLANATION OF THE TECHNICAL TERMS of BOTANY Mentioned in this WORK.

A ROOT, *Radix*, is that Part of a Plant, by which it naturally receives its Nouriſhment. There are ſeveral Sorts of theſe, as

A fibrous Root, *Radix fibroſa*, is that which conſiſts only of Fibres. *See Plate* 1. *Fig.* 3.

A tuberous Root, *Radix tuberoſa*, is that which conſiſts of an uniform fleſhy Subſtance, and is of a rouudiſh Figure. *See Plate* 1. *Fig.* 1. and 2. is cut horizontally.

A bulbous Root, *Radix bulboſa*, is that which conſiſts of ſeveral Coats involving one another as is ſhewn *Plate* 1. *Fig.* 4, and 5. or of ſeveral Scales lying over one another as in *Plate* 1. *Fig.* 6. The firſt of theſe is called a tunicated Root, the laſt a ſquamous Root.

A granulous Root, *Radix granuloſa*, is a Kind of grumous Root with ſmall Knobs reſembling ſo many Grains of Corn. *See Plate* 1. *Fig.* 7.

A teſticulated Root, *Radix teſticulata*, is a double tuberous Root, conſiſting of two fleſhy Knobs reſembling a Pair of Teſticles. *See Plate* 1. *Fig.* 8.

An aſphodel Root, *Radix aſphodeli*, is a Kind of grumous Root, whoſe fleſhy Fibres ſwell into large Knobs toward the Bottom reſembling the Dugs of Animals. *See Plate* 1. *Fig.* 9.

A grumous Root, *Radix grumoſa*, is one which is compoſed of ſeveral fleſhy Knobs ending in Fibres. *See Plate* 1. *Fig.* 10.

A Stalk, *Caulis*, is a Part of a Plant, receiving the Nouriſhment from the Root, and diſtributing it into the other Parts with which it is cloathed, not having one Side diſtinguiſhable from the other. The Stalk of a Tree is called the Trunk or Stem, (*i. e.*) *Caudex.*

A Branch, *Ramus*, is the Diviſion of a Stalk. In Trees it is generally called a Bough.

A Pedicle, *Pediculus*, is that Part of a Stalk, which immediately ſuſtains a Leaf, a Flower, or a Fruit. Dr. *Linnæus* has diſtinguiſhed theſe. Thoſe which ſuſtain the Leaves he calls *Petiolus*, and thoſe which ſuſtain the Fruit, *Pedunculus*.

A Spike, *Spica*, is a Part of a Stalk thick ſet with Flowers or Fruits, in ſuch a manner as to form an acute Cone. *See Plate* 1. *Fig.* 12.

A Thyrſe, *ſee Thyrſus*, differs from a Spike in that the Flowers or Fruits are ſet more looſely on it, ſo that there are Spaces viſible between them.

A Panicle, *Panicula*, is a Stalk diffuſed into ſeveral Pedicles ſuſtaining the Flowers or Fruits. *See Plate* 1. *Fig.* 11.

An Umbel, *Umbella*, is the Extremity of a Stalk or Branch, divided into ſeveral Pedicles or Rays, beginning from the ſame Point, and opening in ſuch a Manner as to form an inverted Cone. *See Plate* 1. *Fig.* 13. When the Pedicles (a), into which the Stalk is divided, are ſubdivided into others of the ſame Form, upon which the Flowers or Fruits are diſpoſed (b). The firſt Order (a) is called Rays, the ſecond (b) Pedicles. That Umbel which conſiſts of one Pedicle only is called a ſimple Umbel. *See Fig.* 15. *Plate* 1. That which is compoſed both of Rays and Pedicles, is called a compound Umbel, as *Fig.* 13.

A Corymbus differs from an Umbel, in that the Rays or Pedicles, are diſpoſed in ſuch a Manner as to form a Sphere. *See Plate* 1. *Fig.* 14.

A twining Stalk, *caulis volubilis*, is one which twiſts about any Prop or Tree without the Help of Tendrils.

A climbing Stalk, *Caulis ſcandens*, is that which faſtens itſelf to any Prop or neighbouring Support by the Help of Tendrils.

A creeping Stalk, *Caulis repens*, is that which lies on the Ground and propagates itſelf by emitting Roots at the Joints.

A trailing, or procumbent Stalk, *Caulis procumbens*, is that which lies on the Ground unleſs it is ſupported, but does not emit Roots.

A Tendril, *Capreolus* or *Clavicula*, is a Part of a Stalk, or rather a Branch from the Side of a Stalk, placed oppoſite to the Leaf, which curls and lays hold on any adjacent Body, and thereby ſupports the Stalk, as in the Vine, *&c.*

A Fruit, *Fructus*, is that Part of a Plant which contains the Seed with its Covering. Of this there are many different Forms.

A Cone, *Conus*, is a dry Seed Veſſel, conſiſting of ſeveral ligneous Parts, adhering cloſely together, and ſeparating when ripe. Of this there are ſeveral Sorts which differ in their Form and Texture, as in *Plate* 2. *Fig.* 1. is a Cone of the Pinaſter whoſe ligneous Scales end in ſharp Protuberances, which open by the Warmth of the Sun in the Spring, and eaſily emit the Seeds. *Fig.* 2. *Plate* 2. ſhews the Cone of the Cedar of *Libanus* whoſe Scales are ſmooth, lying cloſe over each other, and drop off leaving the middle Column on the Branches. *Fig.* 3. *Plate* 2. exhibits a Cone of the Fir Tree, whoſe Scales are ſmooth, and the Form oblong. *Fig.* 4, and 5. *Plate* 2. ſhews the Cone of the Cypreſs, which is of an irregular ſpherical Form, and the Scales ſeparate emitting the Seeds from between them. *Fig.* 6. *Plate* 2. repreſents the Cone of the Pine Tree whoſe Scales terminate in blunt Protuberances.

Dry Seed Veſſels, according to the Number of Cells into which they are divided, are called Unicapſular, Bicapſular, quinquecapſular, &c. *See Plate* 2. *Fig.* 8, and 9.

An Apple, *Pomum*, is generally underſtood to be a fleſhy Fruit incloſing ſeveral hard Seeds in the Center, but it is very difficult to know what the Antients meant by the Title Pomum, for this Title is frequently uſed in their Writings to expreſs Things of different Forms, therefore this Epithet ſhould be only applied to thoſe Fruits which are umbilicated, and contain many Seeds. *See Fig.* 11. and 12. *Plate* 2.

Acini is by ſome ſuppoſed to be the Berries of Grapes and Currants, but is uſed in a more extenſive Senſe by moſt of the Writers on Botany, who ſtile the ſmall Protuberances of Mulberries, Strawberries, &c. *Fig.* 7. *Plate* 2. *Acini.*

A Cluſter, *Racemus*, is a Stalk divided or branched into ſeveral Pedicles, ſuſtaining the Flowers or Fruits thick ſet together in an oblong Form. *See Fig.* 12. *Plate* 2. The firſt of theſe Conditions diſtinguiſhes it from a Spike, the laſt from a Panicle.

A Pod, *Siliqua*, is a long membranaceous Seed Veſſel, either flat or round, containing one or two Rows of Seeds. *See Fig.* 13. and 14. *Plate* 2. Some of theſe are jointed, each of the Swellings containing one Seed, as is ſhewn *Fig.* 15. *Plate* 2.

The Seeds of Corn and Graſs are called Grains, *Grana*. The Leaf which covers the Grain is called Chaff, *Gluma*, *Fig.* 16. *Plate* 2. *a* The Beard, *Ariſta*. *b* is a ſmall Needle proceeding from the Chaff. The Chaff which has no Beard is called naked.

A Plum, *Prunum*, is a fleſhy Veſſel incloſing a hard brittle Shell, in which is one or two Seeds.

A Nut, *Nux*, is a Seed covered with a hard dry brittle Shell.

A Flower, *Flos*, is the Organs of the Generation of both Sexes, adhering to a common Placenta, together with their common Coverings; or of either Sex ſeparately, with its proper Coverings, if it have any.

Flowers are either male, female, or hermaphrodite. The male Flowers have Stamina and Summits, but have no Ovary or Style. Female Flowers have an Ovary and Style, but have no Stamina or Summits Hermaphrodite Flowers have both Organs of Generation.

The Ovary, *Ovarium*, or *Germen*, according to *Linnæus*, is the Rudiment of the Fruit. *See a Fig.* 13. *Plate* 3. and ſo is properly the female Organ o Generation.

The Style, *Stylus*, is a Body accompanying the Ovary, either ariſing from the Top of it, *ſee b Fig.* 13. *Plate* 3. or ſtanding as an Axis in the Middle with the Embyrons of the Seeds round it. *Fig.* 12. *Plate* 3, and *c* is the Stigma.

The Empalement, *Calix*, is generally underſtood to mean, thoſe leſs tender Leaves, which cover the other Parts of the Flower. *See Fig.* 11. *a Plate* 3. Theſe, according to Mr. *Ray*, are of an herbaceous Colour.

The Petals, *Petala*, are thoſe tender fine-coloured Leaves which are the moſt conſpicuous Parts of a Flower. *See Fig.* 11. *b Plate* 3.

The Stamina or Filaments, according to *Linnæus*, which ſome call Chives, are thoſe ſlender Threads which generally ſurround the Style. *See c Fig.* 11. *Plate* 3.

The Summits or Apices, which *Linnæus* calls Anthera, are thoſe Bodies which contain the *Farina fœcundans* or Prolifick Powder, analagous to the male Sperm in Animals; theſe generally terminate the Summits. *See d Fig.* 11. *Plate* 3.

Flowers according to the Number of their Petals, are called monopetalous, dipetalous, tripetalous, tetrapetalous, &c.

A regular monopetalous Flower is that in which the Petal is not at all divided. *See Fig.* 1. *Plate* 3. or if divided, the Segments are equal, as in *Fig.* 2. *Plate* 3.

An irregular monopetalous Flower, is that in which the Parts of the Petal are unequal, as in *Fig.* 3. *Plate* 3. theſe Dr. *Linnæus* calls ringent Flowers. Mr. *Ray*, *Tournefort*, and others, call all thoſe monopetalous Flowers, whoſe Petals are connected at their Baſe, and fall off without ſeparating; but Dr. *Linnæus* calls them tetrapetalous or pentapetalous, when the Petal is divided into ſo many Parts to the Bottom.

A regular polypetalous Flower, is when the Petals are equal in Size, and agree in Poſition, as in *Fig.* 3. *Plate* 3.

An irregular polypetalous Flower is when the Petals do not agree together in Figure and Poſition. *See Fig.* 9. *and* 10. *Plate* 3.

A labiated or Lip Flower, *Flos Labiatus*, is an irregular monopetalous Flower divided uſually into two Lips, as in *Fig.* 6. *Plate* 3. The upper Lip *a* is called the Creſt, *Galea*, and the under one *b*, the Beard, *Barba*. Sometimes the Creſt is wanting, as in *Fig.* 4. *Plate* 3. and then the Style and Stamina ſupply its Place. This is by ſome called an unlabiated Flower.

A papilionaceous Flower, *Flos papilionaceous*, in ſome Meaſure reſembles a Butterfly with its Wings extended. *See Fig.* 5. *and* 7. *Plate* 3. It always conſiſts of theſe 4 Parts: The Standard, *Vexillum a*, which is a large Segment or Petal; the two Wings, *Alæ b* which compoſe the Sides; and the Keel, *Carina c*, which is a concave Petal or Segment, reſembling the lower Part of a Boat; the Keel is ſometimes of one Petal or Segment and entire; ſometimes it conſiſts of two Petals or Segments adhering pretty cloſely together.

A Floret, *Floſculus*, is a little Tube expanded at the Top, uſually into five Segments. *See Fig.* 17. *and* 20. *Plate* 3. and ſitting upon the Embryon of a ſingle Seed *a*; from the inner Part of the Floret ariſe five Stamina *b*, which uniting together form a Sheath *c*; from the Embryon of the Seed *a*, ariſes a Style *d*, which paſſes through the Sheath *c* to which it is connected, and is terminated by a bifid Stigma which is generally reflexed, *e*. Theſe are hermaphrodite.

A Semifloret, *Semifloſculus*, is tubulous at the Baſe, and afterwards expanded in Form of a Tongue. *See Fig.* 18. *Plate* 3. Theſe generally form the Rays of compound Flowers, and are female.

A compound Flower, *Flos compoſitus*, is that which is compoſed either of Florets, *Fig.* 19. *Plate* 3. or Semiflorets, *Fig.* 15. *Plate* 3. or both together, *Fig.* 16. and *Fig.* 20.

A Diſk, *Diſcus*, is an Aggregate of Florets forming, as it were, a plain Surface, as in *Fig.* 19. *Plate* 3. Such Flowers are called diſcous Flowers.

A Ray, *Radius*, is ſeveral Semiflorets ſet round a Diſk. *See Fig.* 16. *a*, *Plate* 3. in Form of a radiant Star. Such Flowers are called radiated diſcous Flowers; thoſe which have no ſuch Ray are called naked diſcous, as *Fig.* 19. *Plate* 3.

A headed Flower, *Flos capitatus*, is that which is compoſed of Florets and Semiflorets collected into a roundiſh Head, and are all incloſed in one common ſcaly Empalement, as in *Fig.* 14. *Plate* 3.

A whorled Flower, *Flos verticillatus*, is when the Flowers are collected in Whorls round the Stalks at the Baſe of the Leaves, as in *Fig.* 22. *Plate* 3.

A Moſs Flower, which riſes on a ſlender Foot Stalk from the Plant, *Fig.* 27. *Plate* 3. with the Head (or *Capitulum*), *Fig.* 28. and the Cover (or *Calyptra*) which opens and falls off when the Seeds are ripe.

A Cone cut through the Middle longitudinally to repreſent how the Seeds are lodged between the Scales. *See Fig.* 22. *Plate* 3.

Fig. 24. Plate 3. ſhews the Parts of a Flower, *a* is the Empalement, *b* the Germen, *c* the Style, *d* the Stigma, *e* the Stamina, *f* the Summit, and *g* the ſame entire.

Fig. 21. Plate 3. ſhews a Flower with ſeveral Nectaria which ſit cloſe to the Germen *a*.

Fig. 25. *a* ſhews a Germen, *b* a Style, and *c* a Stigma.

Fig. 26. ſhews a Grain of *Farina fœcundans* magnified.

P L A T E IV.

Contains the Figures which explain the Syſtem of Dr. Linnæus, *who claſſes the Plants by the Number of Stamina in their Flowers.*

Fig. 1. ſhews a Flower with one Stamina and one Style, which he titles *Monandria Monogynia.*

Fig. 2. ſhews a Flower with two Stamina and one Style, which he titles *Diandria Monogynia.*

Fig. 3. ſhews a Flower with three Stamina and one Style, which he titles *Triandria Monogynia.*

Fig. 4. ſhews a Flower with four Stamina and one Style, which he titles *Tetrandria Monogynia.*

Fig. 5. ſhews a Flower with five Stamina and one Style, which he titles *Pentandria Monogynia.*

Fig. 6. ſhews a Flower with five Stamina and two Styles, which he titles *Pentandria Digynia.*

Fig. 7. ſhews a Flower with ſix Stamina and one Style, which he titles *Hexandria Monogynia.*

Fig. 8. ſhews a Flower with ſix Stamina and three Styles, which he titles *Hexandria Trigynia.*

Fig. 9. ſhews a Flower with ſeven Stamina and one Style, which he titles *Heptandria Monogynia.*

Fig. 10. ſhews a Flower with eight Stamina and one Style, which he titles *Octandria Digynia.*

Fig. 11. ſhews a Flower with nine Stamina and one Style, which he titles *Enneandria Monogynia.*

Fig. 12. ſhews a Flower with ten Stamina and one Style, which he titles *Decandria Monogynia.*

Fig. 13. ſhews a Flower with twelve Stamina and one Style, which he titles *Dodecandria Monogynia.*

Fig. 14. ſhews a Flower with more than twelve Stamina, but leſs than twenty, and theſe ariſe either from the Petals or the Empalement, and with one Style, which he titles *Icoſandria Monogynia.*

Fig. 15. ſhews a Flower with a great Number of Stamina and one Style, which he titles *Polyandria Monogynia.*

Fig. 16. ſhews a Flower with two long, and two ſhorter Stamina, and one Style, which he titles *Didynamia.*

Fig. 17. ſhews a Flower with four long and two ſhorter Stamina, and one Style, which he titles *Tetradynamia.*

Fig. 18. ſhews a Flower with five Stamina which are connected with the Style in one Body, which he titles *Monadelphia Pentandria.*

Fig. 19. ſhews a Flower with ten Stamina and one Style, which are joined at the Baſe into one Body, which he titles *Monadelphia Decandria.*

Fig. 20. ſhews a Flower with many Stamina joined in one Body, with a many-pointed Style, which he titles *Monadelphia Polyandria.*

Fig. 21. ſhews a Flower with ſix Stamina joined in two Bodies, which he titles *Diadelphia Hexandria.*

Fig. 22. ſhews a Flower with ten Stamina, nine of which are joined together at their Baſe, and the other is ſeparated, with one Style. This he titles *Diadelphia Decandria.*

Fig. 23. ſhews a Flower with many Stamina, which are connected at their Baſe into ſeveral Cluſters or Bunches, which he titles *Polyadelphia Polyandria.*

Fig. 24. ſhews a ſingle Floret of a compound Flower. Theſe which are hermaphrodite have five Stamina and one Style which are connected at their Baſe. This Claſs he titles *Syngeneſia.*

Fig. 25. ſhews a Flower whoſe Stamina are connected with, and ſeem to proceed from, the Style, which is divided into two Parts. This he titles *Gynandria.*

Fig. 26. ſhews a Flower of the ſixteenth Claſs, which is of a different Figure from thoſe before repreſented. The Stamina of this ſtand round the Column formed by the Style.

Fig. 27. ſhews a Floret of the compound Flowers ſitting upon the Germen or Embryo of the Seed, with the two reflexed Stigmas on the Top of the Style.

AN

EXPLANATION

OF THE

AUTHORS NAMES and WORKS

Referred to by the

ABBREVIATIONS in this WORK.

ACT. Phil. *The philoſophical Tranſactions of the Royal Society.*

Act. Reg. Sc. *The Memoirs of the Royal Academy of Sciences at* Paris.

Aldin. *A Deſcription of ſome rare Plants which were cultivated in the* Farneſian *Gardens at* Rome, *by* Tobias Aldinus. *Printed at* Rome 1625, Fol.

Alpin. Ægypt, Proſper Alpinus's *Natural Hiſtory of* Egypt, *in two Parts. Reprinted in* 4to *at* Leyden 1735.

Alpin. Exot. Proſper Alpinus *of exotick Plants, in two Books. Printed in* 4to. *at* Venice 1656.

Amman. Char. Paul Amman's *Characters of Plants Printed in* 12mo.

Amman. Hort. Paul Amman's *Deſcription of the Plants in the Garden of* Boſius. *Printed in* 4to.

Amman. Joh. John Amman's *Hiſtory of* Ruſſian *Plants. Printed in* 4to. *at* Peterſburgh 1739.

Baniſter. *A Catalogue of Plants obſerved in* Virginia *by* John Baniſter. *Printed in* Ray's *Hiſtory of Plants.*

Barrel. Icon. Jacob Barrelier's *Hiſtory and Figures of the Plants which he obſerved in* France, Spain, *and* Italy. *Printed at* Paris *in* Fol. 1714.

Bocc. Rar. *Figures and Deſcriptions of rare Plants obſerved by* Paul Boccone *in* Sicily, &c. *Printed at* Oxford 1674, *in* 4to.

Bocc. Muſ. Paul Boccon's *Muſeum of rare Plants, Printed in* Italian, *in two Parts, at* Venice, 1697, 4to.

Boerh. Ind. *An Index of the Plants growing in the Phyſick Garden at* Leyden, *by Dr.* Herman Boerhaave. *Printed at* Leyden 1719, *in* 4to.

Breyn. Cent. I. *The firſt Century of Exotick Plants, by Dr.* James Breynius. *Printed at* Dantzick, 1678, Fol.

Breyn. Prod. I. and II. *The firſt and ſecond* Prodromus *to the Collection of rare Plants, by Dr.* James Breynius. *The firſt printed in* 1680, *the ſecond in* 1689, *at* Dantzick, *in* 4to. *Both reprinted at* Dantzick *in* 1739, *in* 4to. *by his Son* John Philip Breynius.

Burman. Dec. John Burman's *Decades of rare* African *Plants. Printed in* 4to. *at* Amſterdam 1738.

Burman. Theſ. John Burman's *Treaſury of* Ceylon *Plants. Printed in* 4to. *at* Amſterdam 1737.

Buxbaum. Cent. I. & II. John Chriſtian Buxbaum's *Century the Firſt. Printed at* Peterſburgh 1728, *the Second* 1729, *both in* 4to.

Cæſalp. Andrew Cæſalpinus *of Plants. Printed at* Florence 1583, *in* 4to.

Camer. Hort. Joacim Camerarius's *Garden of Plants. Printed in* 4to. *at* Frankfort 1588.

Cateſb. Hiſt. Mark Cateſby's *Natural Hiſtory of* Carolina, Florida, *and the* Bahama *Iſlands. In two large Vols.* Fol. *with Cuts. Printed at* London *in ſeveral Years.*

C. B. P. Caſpar Bauhinus's *Pinax to his Theatre of Plants. Printed at* Baſil 1671, *in* 4to.

C. B. Prod. Caſpar Bauhinus's *Prodromus to his Theatre of Plants. Printed at* Baſil 1671, *in* 4to.

Cluſ. Hiſt. Charles Cluſius's *Hiſtory of rare Plants. Printed at* Antwerp 1605. Fol.

Cluſ. Exot. Charles Cluſius's *Exoticks, in ten Books. Printed at* Antwerp 1601. Fol.

Column. Ecphr. Fabius Columna's *Ecphraſis, in two Parts. Reprinted in* 4to. *at* Rome 1616.

Commel. Rar. *Deſcriptions and Figures of rare exotick Plants, which were in the Phyſick Garden at* Amſterdam, *by* Caſper Commelin. *Printed at* Leyden 1706, 4to.

Commel. Præl. Caſpar Commelin's *Prelude to Botany. Printed at* Leyden 1703. *in* 4to.

Corn. James Cornutus's *Hiſtory of* Canada *Plants. Printed at* Paris 1635. *in* 4to.

Dale. Samuel Dale's *Pharmacologiæ, in two Volumes* 8vo. *Printed at* London 1710, *and reprinted in one Volume in* 4to. *at* London, 1735.

Dale Thom. Thomas Dale's *Obſervations on many new Plants which he diſcovered in* America. MS.

Dalech. Hiſt. Jacob Dalechamp's *General Hiſtory of Plants. Printed at* Lyons 1587, *in two Vols.* Fol.

Dillen. Cat. John Jacob Dillenius's *Catalogue of the Plants which grow naturally about* Giſſam *in* Germany, *Printed at* Frankfort 1719, *in* 8vo.

Dod. Dodonæus's *Six Pemptedes. Printed at* Antwerp 1616. Fol.

Dodart.

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Dodart. Dodart's *Commentaries to the Hiſtory of Plants. Printed at* Paris 1676, Fol.

Elchr. Elchrodt's *Index of Plants in the Garden at* Carolſruhan. *In three Parts* 8vo.

Ferrar. Heſp. John Baptiſt Ferrarius's *Heſperides. Printed at* Rome 1646, Fol.

Ferrar. Fl. Cult. *The Culture of Flowers, by* John Baptiſt Ferrarius. *Printed at* Rome, 1633. *in* 4to.

Feuille. Ludovick Feuille's *Phyſical, Mathematical, and Botanical Obſervations, made in South* America. *Printed in three Volumes* 4to. *at Paris. The firſt and ſecond in* 1714, *and the third* 1725.

Flor. Virg. Flor. Virginica, *or, An Account of the Plants which have been obſerved to grow in* Virginia, *by* John Clayton. *Publiſhed by* Frederick Gronovius *at* Leyden. *In two Parts,* 8vo. 1739.

Flor. Lugd. Flora-Lugduno Batava, *or, A Catalogue of the rare Plants which were growing in the Garden at* Leyden. *Printed in* 8vo. *at* Leyden 1695.

Flor. Zeyl. Flora Zeylanica, *or, A Catalogue of the Plants which were collected by* Paul Hermen *in the Iſland of* Ceylon, *from* 1670 *to* 1677. *Printed at* Amſterdam *in* 8vo. 1748. *by Dr.* Linnæus.

Garidel. Peter Garidel's *Hiſtory of the Plants growing about* Aix *in* Provence. *Printed at* Paris 1719. *in* Fol.

Ger. Emac. Gerard's *Hiſtory of Plants, improved by* Thomas Johnſon. *Printed at* London 1652. Fol.

Grew. Nehemiah Grew's *Anatomy of Plants. Printed at* London 1652. Fol.

Hort. Chelſ. *A Catalogue of Plants in the* Chelſea *Garden, by Mr.* Iſaac Rand, F. R. S. *Printed at* London 1739. 8vo.

Hort. Amſt. *The Hiſtory of rare Plants which were in the Phiſick Garden at* Amſterdam, *by* Caſpar *and* John Commelin, *in two Volumes,* Folio. *Printed at* Amſterdam 1697 *and* 1701.

H. Beaum. *A Catalogue of the exotick Plants which were in the Gardens of Mynheer* Van Beaumont in Holland. *Printed at the* Hague 1690. 8vo.

Hort. Elth. Hortus Elthamenſis, *or, A Deſcription of the rare Plants which were growing in the Garden at* Eltham, *by* John James Dillenius, *in two Volumes* Folio, *with Figures. Printed at* London 1732.

Hort. Mal. *The Plants which grow naturally at* Malabar *figured and deſcribed by* Henry Rheede Van Draakenſtain *in twelve Volumes* Folio. *Printed at* Amſterdam *from* 1679 *to* 1703.

Hort Maur. *A Catalogue of the Plants in the Garden of Signior* Mauroceni *by* Anthony Tita, 8vo. *Printed at* Padua 1713.

Hort. Cliff. Hortus Cliffortianus, *or, A Catalogue of the Garden of Plants at* Hartechamp, *belonging to Mr.* George Clifford *of* Amſterdam, *ranged according to the new Method of the Sexes of Plants, by Dr.* Charles Linnæus. *Printed at* Amſterdam *in* Folio 1736. *with elegant Figures.*

H. C. Hortus Catholicus, *i. e. the Univerſal Garden, by* Franciſcus Cupani. *Printed at* Naples 1696. 4to.

H. Edin. *A Catalogue of the Plants growing in the Phyſick Garden at* Edinburgh, *by* James Sutherland. *Printed at* Edinburgh 1683, *in* 8vo.

H. Eyſt. Hortus Eyſtettenſis, *by* Baſilius Beſler. *Printed at* Neurenberg 1613. Fol.

H. L. *A Catalogue of the Plants growing in the Phyſick Garden at* Leyden, *by* Paul Herman, M. D. *Printed at* Leyden 1687. in 8vo.

H. R. Monſp. *A Catalogue of the Plants growing in the Royal Garden at* Montpelier, *by* Peter Magnol. *Printed at* Montpelier 1697. *in* 8vo.

H. R. Par. *A Catalogue of the Plants growing in the Royal Garden at* Paris. *Printed at* Paris 1665. *in* Fol.

Hort. Upſal. Hortus Upſalienſis, *or, A Catalogue of the exotick Plants growing in the Garden at* Upſal *in* Sweden, *by* Charles Linnæus. *Printed at* Amſterdam *in* 8vo. 1748.

Houſt. Houſtoun, *Dr.* William, *a Manuſcript Catalogue of the Plants which he had obſerved growing in the Iſlands of* Jamaica *and* Cuba; *as alſo at* Campeachy, *and* La Vera Cruz, *in the Years* 1728, 1729, *and* 1732.

J. B. *An univerſal Hiſtory of Plants, by* John Bauhin, *in three Volumes. Printed at* Embrun 1650. *in* Fol.

Juſſ. Juſſieu. Antony Juſſieu, *Profeſſor of Botany in the Royal Garden at* Paris, *who has publiſhed ſome Memoirs of Plants, in the Acts of the Academy of Sciences at* Paris.

Juſſ. Bern. *Dr.* Bernard de Juſſieu, *Demonſtrator of the Plants in the Royal Garden at* Paris, *who has delivered to the Royal Academy of Sciences many curious Obſervations on Plants which are printed in their Memoirs.*

Lin. Gen. Plant. Charles Linnæus, F. R. S. *Doctor of Phyſick, and Profeſſor of Botany at* Upſal *in* Sweden, *who has publiſhed three Editions of his Method of ranging Plants according to their Parts of Generation. The firſt at* Leyden *in* 1737; *the ſecond in* 1742, *and the third in* 1754 *at* Stockholm *in* 8vo.

Lin. Sp. Plant. *The Species of Plants by the ſame Author in two Volumes* 8vo. *Printed at* Stockholm 1753.

Lin. Mat. Med. Linnæus's *Materia Medica* 8vo. *Printed at* Stockholm 1749.

Kemp. Ex. *Doctor* Englebert Kœmpfer's *Deſcription of the curious Plants which he obſerved in* Japan. *Printed at* Limoguen *in* 1712, 4to.

Lob. Adv. Matthias Lobel's *Adverſaria Stirpium. Printed at* Antwerp 1676. *in.* Fol.

Lob. Ic. *Icons of Plants by* Matthias Lobel. *Printed at* Antwerp 1576. *in* Fol.

Lugd. *A general Hiſtory of Plants by* Dalechamp. *Printed at* Lyons 1586. *Two Volumes in* Fol.

Magn. Peter Magnol, *his Catalogue of the Plants growing about* Montpelier. *Printed in* 8vo. *at* Montpelier *in* 1686.

Magn. Hort. Peter Magnol, *his Catalogue of the Plants in the Garden at* Montpelier. *Printed at* Montpelier *in* 1697, in 8vo.

Malp. *The Anatomy of Plants,* by Marcellus Malpighius. *Printed at* London *in* Folio, 1679.

Marcg. Marcgrave, George, *his natural Hiſtory of* Braſil. *Printed at* Leyden 1648, *in* Folio.

Martyn. Cent. Martyn, John, *Profeſſor of Botany at* Cambridge, *his five Decades of rare Plants. Printed at* London 1728, 1729, &c. *in large* Folio, *with Figures of the Plants in their proper Colours.*

Matth. Peter Andrea Matthiolus, *his Commentaries on* Dioſcorides. *Printed at* Venice 1558. *in* Folio.

Mentz. Chriſtian Mentzelius's *Indexes of Plants in ſeveral Languages. Printed at* Berlin *in* Fol. 1682.

Michel. Peter Antony Micheli, *his new Genera of Plants. Publiſhed at* Florence 1729. *in* Folio.

Moriſ. H. R. Moriſſon, Robert, *his Catalogue of the Royal Garden at* Blois, *to which is joined his Prelude to Botany. Printed at* London 1699. *in* 8vo.

Mor. Hiſt. *An univerſal Hiſtory of Plants, by* Robert Moriſſon. *Printed at* Oxford 1679, 1680, *and* 1699. *Three Volumes in* Folio.

Munt. Aloid. *An Hiſtory of Aloes, by* Abraham Muntingius. *Printed at* Amſterdam 1668. *in* 4to.

Munt. Phyt. Muntingius's *Phytographia. Printed at* Leyden 1702. Fol.

Munt. Herb. Brit. Muntingius's *true Herba Britannica,* 4to. *to which is frequently added his Aloidærum. Printed at* Amſterdam *in* 4to. 1698.

Niſſol, Niſſole, *his Memoirs of Plants, printed in the Acts of the Academy of Sciences at* Paris.

Par. Bat. Prod. *The* Prodromus *to the* Paradiſus Batavus. *Printed at* Leyden 1698. *in* 4to.

Park. Parad. *The Garden of pleaſant Flowers, by* John Parkinſon. *Printed at* London 1629. *in* Fol.

Park. Theat. *The Theatre of Plants, by* John Parkinſon. *Printed at* London 1649. *in* Fol.

Pet. James Petiver, *his Hiſtory of the* Engliſh *Plants. Printed at* London *in* Fol. *with Cuts,* 1713.

Piſ. Braſ. William Piſo, *his Natural Hiſtory of* Braſil. *Printed at* Leyden 1648. *in* Fol.

Pluk. Alm. Almageſtum Botanicum, *by* Leonard Pluknet. *Printed at* London 1696. *in* Folio.

Pluk. Amal. Amaltheum Botanicum, *by* Leonard Pluknet. *Printed at* London 1703. *in* Fol.

Pluk. Mantiſſ. Mantiſſa Almageſti Botanici, *by* Leonard Pluknet. *Printed at* London 1700. *in* Fol.

Pluk. Phyt. Pluknet's Phytographia, *i. e. a Delineation of Plants. Printed at* London 1691. *and* 1692. Fol.

Plum. Cat. *Father* Charles Plumier, *his Catalogue of* American *Plants. Printed at* Paris 1703. *in* 4to.

Plum. N. G. *New Genera of* American *Plants, by Father* Plumier. *Printed at* Paris 1713. *in* 4to.

Plum. Pl. Am. *A Deſcription of* American *Plants by Father* Plumier. *Printed at* Paris 1693. *in* Fol.

Pon. Bald. Ponæ, John, *his Deſcription of the Plants growing upon Mount* Baldus *and* Verona. *Printed at* Antwerp *in* Fol. 1601.

Ponted. Pontedera, *his* Anthologia, *or Diſcourſe on the Flowers of Plants. Printed at* Padua 1720. *in* 4to.

Raii Hiſt. Ray's *Hiſtory of Plants. Printed at* London 1686. *and* 1704. *in three Volumes* Fol.

Raii Meth. Ray, John, *his Method of claſſing Plants improved and augmented. Printed at* London 1703. 8vo.

Raii Syn. *A Synopſis of the* Britiſh *Plants, by* John Ray, *augmented by Dr.* Dillenius. *Printed at* London 1724. *in* 8vo.

Raw. Leonard Rawolf's *Travels in the Eaſt. Printed at* London.

Rea. Flora, Ceres, *and* Pomona, *by* John Rea. *Printed at* London 1676. *in* Fol.

Rivin. Auguſtus Quirinus Rivini, *his Order of ranging Plants by the Figures of their Flowers. Printed in five Claſſes at* Leipſick *in* 1690, 1691, *and* 1699. *in* Fol. *with Figures.*

Roy. Flor. Leyd. Adrian Van Royen, *Profeſſor of Botany at* Leyden, *his* Prodromus, *or Catalogue of the Plants growing in the Phyſick Garden at* Leyden, *Printed at* Leyden 1741. *in* 8vo.

Sauv. Flora Monſpelienſis *by* Fr. Sauvage Hage 8vo, 1755.

Scheuch. John Jacob Scheuzer, *his Obſervations of the Plants he diſcovered growing on the* Alps, *in three Journeys. Printed at* Leyden, *in two Volumes* 4to. 1723.

Sloan. Cat. *A Catalogue of the Plants growing in the Iſland of* Jamaica, *by Sir* Hans Sloane, M. D. *Printed at* London 1696. *in* 8vo.

Sloan. Hiſt. *A Natural Hiſtory of* Jamaica, *by Sir* Hans Sloane, M. D. *Printed at* London 1707. *and* 1725. *in two Volumes* Folio.

Swert. *A* Florilegium, *or, A Collection of Flowers by* Swertius. *Printed at* Frankfort 1612. *in* Fol.

Tab. Ic. *Icons of Plants, by* Tabernæmontanus. *Printed at* Frankfort 1590. *in* Fol.

Tourn. *Inſtitutions of Botany, by* Joſeph Pitton Tournefort. *Printed at* Paris 1716. 4to.

T. Cor. *A Corollary to the Inſtitutions of Botany, by* Joſeph Pitton Tournefort. *Printed at* Paris 1703. 4to.

Trew. Chriſtopher Jacob Trew *Doctor of Phyſic, F. R. S. and of the Academy of natural Curioſities, who has publiſhed five Decades of rare Plants finely illuminated in folio at* Neurenberg.

Triumf. John Baptiſt Triumfetta, *his Obſervations on the Vegetation of Plants, with his Hiſtory of the Plants growing about* Rome. *Printed at* Rome 1685, *in* 4to.

Triumf. Syl. John Baptiſt Triumfetta, *his Syllabus of the Plants in the Phyſick Garden at* Rome.

Vaill. Sebaſtian Vaillant, *his new Genera of Plants, Printed in the Memoirs of the Academy of Sciences.*

Vaill. Diſ. Sebaſtian Vaillant's *Diſcourſe on the Structure of Flowers. Printed at* Leyden 1718. *in* 4to.

Volk. Flora Neurenbergenſis. *An Account of Plants in the Garden of* Neurenberg, *of Dr.* Volkamer. *Printed at* Neurenberg 1700. 4to.

Zan. *A Hiſtory of Plants, by* Jacob Zanoni. *Printed at* Bologna 1675. *in* Folio.

The Claſs and Order of each Plant, according to the Syſtem of Dr. LINNÆUS.

Genus.	Claſs.	Order.	Genus.	Claſs.	Order.	Genus.	Claſs.	Order.
Abies	21	9	Apium	5	2	Bombax	13	1
Abrotanum	19	2	Apocynum	5	2	Bontia	14	2
Abſinthium	18	2	Aquilegia	13	5	Borbonia	17	3
Abutilon	16	3	Arabis	15	2	Borrago	5	1
Acacia	13	1	Arachis	17	3	Boſia	5	2
Acalypha	21	9	Arbutus	10	1	Brabejum	4	1
Acanthus	14	2	Arctium	19	1	Braſſica	15	2
Acer	23	1	Arctotis	19	4	Breynia	13	1
Acetoſa	6	3	Argemone	13	1	Bromelia	6	1
Aconitum	13	3	Ariſtolochia	20	5	Browallia	14	2
Acorus	6	1	Armeniaca	12	1	Brunsfelſia	5	1
Actæa	13	1	Arnica	19	2	Bryonia	21	10
Adenanthera	10	1	Artedia	5	2	Bubon	5	2
Adonis	13	7	Artemiſia	18	2	Buddleja	4	1
Æſchynomene	17	3	Arum	20	7	Bugula	14	1
Æſculus	7	1	Arundo	3	2	Bulbocodium	6	1
Agave	6	1	Aſarina	14	2	Bunias	15	2
Ageratum	17	1	Aſarum	11	1	Bunium	5	2
Agrimone	11	2	Aſclepias	5	2	Buphthalmum	19	2
Agroſtemma	10	5	Aſcyrum	18	3	Bupleurum	5	2
Alaternus	5	1	Aſpalathus	17	3	Butomus	9	3
Alcea	16	3	Aſparagus	6	1	Buxus	21	4
Alchimilla	4	1	Aſperugo	5	1	Cacalia	21	1
Allium	6	1	Aſphodelus	6	1	Cacao	18	1
Alnus	21	4	Aſplenium	24	1	Cachrys	5	2
Aloe	6	1	Aſter	19	2	Cactus	12	1
Alpinia	1	1	Aſtragalus	17	3	Cæſalpina	10	1
Alyſſum	15	1	Aſtrantia	5	2	Calendula	19	4
Amaranthus	21	5	Athamanta	5	2	Calla	20	7
Amaryllis	6	1	Atractylis	17	1	Caltha	13	7
Ambroſia	21	5	Atraphaxis	6	2	Cameraria	5	1
Amethyſtea	2	1	Atriplex	23	1	Campanula	5	1
Ammannia	4	1	Atropha	5	1	Canna	1	1
Ammi	5	2	Avena	3	2	Cannabis	22	5
Amomum	1	1	Aurantium	18	2	Capparis	13	1
Amorpha	17	3	Auricula Urſi	5	1	Capraria	14	2
Amygdalus	12	1	Azalea	5	1	Capſicum	5	1
Anacardium	10	1	Baccharis	19	2	Cardamine	15	2
Anacyclus	19	3	Baniſteria	10	3	Cardiaca	14	1
Anagallis	5	1	Barleria	14	2	Cardioſpermum	8	3
Anagyris	10	1	Bartramia	10	1	Carduus	19	1
Ananas	6	1	Baſella	5	3	Carica	22	9
Anaſtatica	15	1	Bauhinia	10	1	Carlina	19	1
Anchuſa	5	1	Bellis	19	2	Carpinus	21	8
Andrachne	21	11	Bellonia	5	1	Carthamus	19	1
Androſace	5	1	Berberis	6	1	Carum	5	2
Andryala	19	1	Beſleria	14	2	Caryophyllus	13	1
Anemone	13	6	Beta	5	2	Caſſia	10	1
Anethum	5	2	Betonica	14	1	Caſſine	5	3
Angelica	5	2	Betula	21	4	Caſtanea	21	8
Anguria	21	10	Bidens	19	1	Catananche	19	1
Anil	17	3	Bignonia	14	2	Cateſbæa	4	1
Anona	13	7	Biſcutella	15	1	Ceanothus	5	1
Anthemis	19	2	Biſerrula	17	3	Cedrus	5	1
Anthericum	6	1	Biſtorta	8	3	Celaſtrus	5	1
Antholyza	3	1	Bixa	13	1	Celoſia	5	1
Anthoſpermum	23	2	Blitum	1	2	Celſia	14	2
Anthyllis	17	3	Bocconia	13	1	Celtis	21	2
Antirrhinum	14	2	Boerhaavia	1	1	Centaurea	19	3
Aphaca	17	3						

Genus.	Claſs.	Order.
Cephalanthus	4	1
Ceraſtium	10	4
Ceratonia	22	5
Cerbera	5	1
Cercis	10	1
Cereus	12	1
Cerinthe	5	1
Ceſtrum	5	1
Chærophyllum	5	2
Chamærops, Appendix		
Cheiranthus	15	2
Chelidonium	13	1
Chelone	13	2
Chenopodium	5	2
Chionanthus	2	1
Chironia	5	1
Chondrilla	19	1
Chryſanthemum	19	2
Chryſobalanus	13	1
Chryſocoma	19	1
Chryſophyllum	5	1
Chryſoſplenium	10	2
Cicer	17	3
Cichorium	19	1
Cicuta	5	2
Circea	2	1
Ciſſampelos	22	1
Ciſtus	13	1
Citharexylon	14	2
Citrus	18	2
Claytonia	5	1
Clematis	13	7
Cleome	15	2
Clethra	10	1
Cliffortia	22	10
Clinopodium	14	1
Clitoria	17	3
Cluſia	13	1
Cutia	22	13
Clypeola	15	1
Cneorum	3	1
Cnicus	19	1
Cochlearia	15	1
Coffea	5	1
Coix	21	3
Colchicum	6	3
Coldenia	4	3
Collinſonia	2	1
Columnea	14	2
Colutea	17	3
Comarum	12	5
Commelina	3	1
Conium	5	2
Conocarpus	5	1
Convallaria	6	1
Convolvulus	5	1
Conyza	19	2
Corchorus	13	1
Cordia	5	1
Coreopſis	19	3
Coriandrum	5	2
Coriaria	22	9

Genus.	Claſs.	Order.
Coris	5	1
Coriſpermum	1	2
Cormis	4	1
Cornutia	14	2
Coronilla	17	2
Cortuſa	5	1
Corylus	21	8
Coſtus	1	1
Cotula	19	2
Cotyledon	10	4
Crambe	15	2
Craniolaria	14	2
Craſſula	5	5
Cratægus	12	2
Crateva	11	1
Crepis	19	1
Creſcentia	14	2
Crinum	6	1
Crithmum	5	2
Crocus	3	1
Crotolaria	17	3
Croton	21	9
Crucianella	4	1
Cucubalus	10	3
Cucumis	21	10
Cucurbita	21	10
Cuminum	5	2
Cunonia	3	1
Cupreſſus	21	9
Curcuma	1	1
Cyclamen	5	1
Cydonia	12	4
Cynanchum	5	2
Cynara	19	1
Cynogloſſum	5	1
Cypripedium	20	1
Cytiſus	17	3
Dalechampia	23	1
Damaſonium	6	5
Daphne	8	1
Datiſca	22	9
Datura	5	1
Daucus	5	2
Delphinium	13	3
Dentaria	15	2
Dianthera	2	1
Dianthus	10	2
Dictamnus	10	1
Diervilla	3	4
Digitalis	14	2
Dioſcorea	22	6
Dioſma	5	1
Dioſpyros	23	2
Dipſacus	4	1
Dodartia	14	2
Doronicum	19	2
Dorſtenia	4	1
Draba	15	1
Dracocephalum	14	1
Dracontium	20	7
Durantia	14	2
Ebenus	17	3

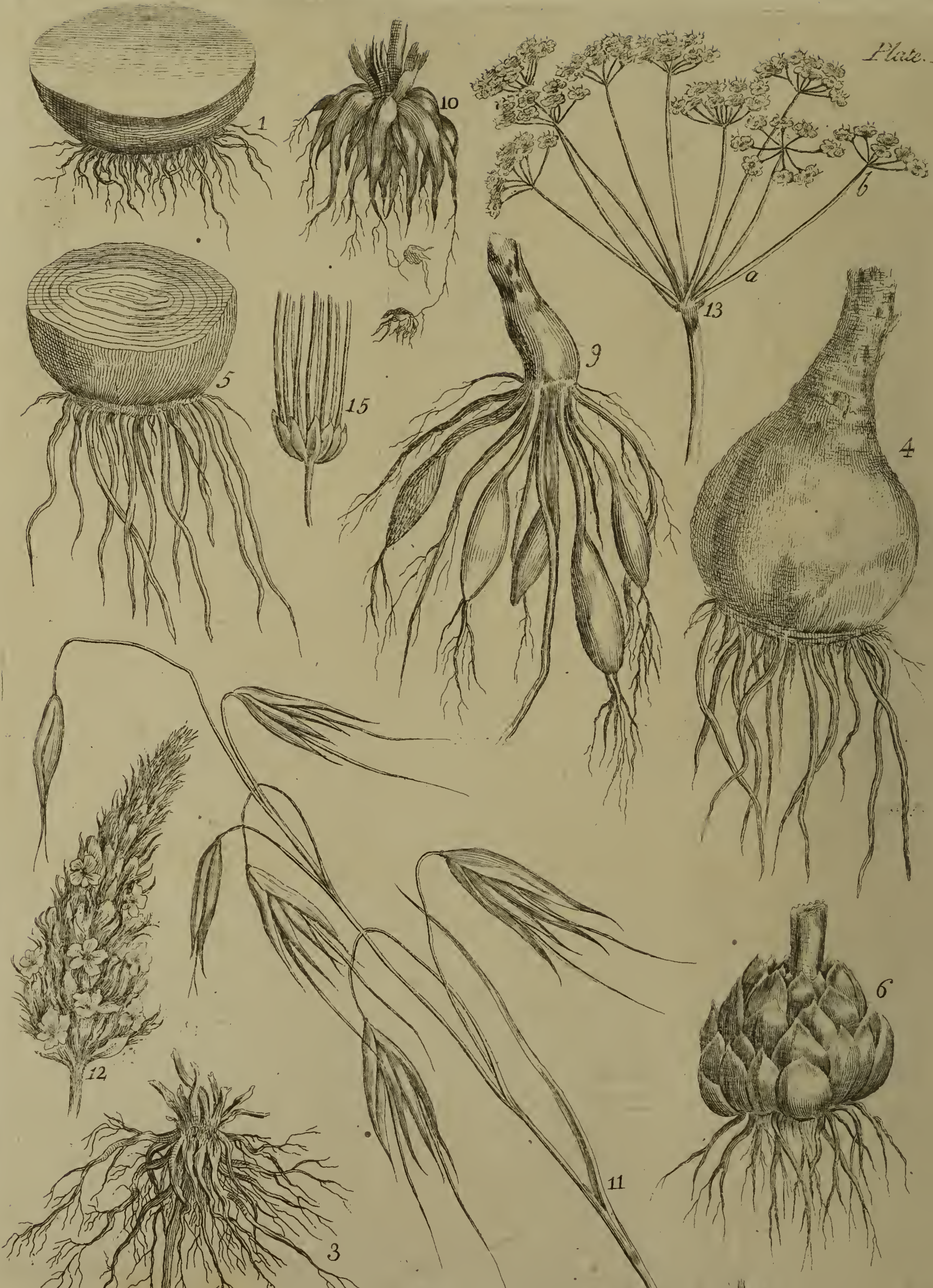
Genus.	Claſs.	Order.
Echinophora	5	2
Echinops	17	1
Echium	5	1
Elæagnus	4	1
Elephantopus	17	1
Emerus	17	3
Empetrum	22	3
Ephedra	22	11
Epigæa	10	1
Epilobium	8	1
Epimedium	4	1
Erica	8	1
Erigeron	19	2
Erinus	14	2
Eriocephalus	19	4
Eruca	5	4
Ervum	17	3
Eryngium	5	2
Eryſimum	15	2
Erythrina	17	3
Erythronium	6	1
Euonymus	5	1
Eupatorium	19	1
Euphorbia	11	3
Faba	17	3
Fagonia	6	6
Fagus	21	8
Ferula	5	2
Ficus	23	3
Fœniculum	5	2
Fragaria	12	5
Frangula	5	1
Fraxinus	23	2
Fritillaria	6	1
Fuchſia, Appendix		
Fumaria	17	1
Galanthus	6	1
Galega	17	3
Galenia	8	2
Galeopſis	14	1
Galium	4	1
Garcinia	11	1
Garidella	10	3
Geniſta	17	3
Gentiana	5	2
Geranium	16	2
Geſnera	14	2
Geum	12	5
Gladiolus	3	1
Gleditſia	23	2
Globularia	4	1
Glorioſa	6	1
Glycine	17	3
Glycyrrhiza	17	3
Gnaphalium	19	1
Gomphrena	5	2
Goſſypium	16	3
Gratiola	2	1
Grewia	20	7
Gronovia	5	1
Groſſularia	5	1
Guajacum	10	1

Genus.	Claſs.	Order.	Genus.	Claſs.	Order.	Genus.	Claſs.	Order.
Guilandina	10	1	Kalmia	10	1	Medicola	6	3
Gundelia	19	1	Karatas	6	1	Medica	17	3
Gypſophyla	10	2	Koempferia	1	1	Medicago	17	3
Haemanthus	6	1	Kiggelaria	22	9	Melampyrum	14	2
Hæmatoxylum	10	1	Knautia	4	1	Melaſtoma	10	1
Halleria	14	2	Lactuca	19	1	Melia	10	1
Hamamelis	4	2	Lagoecia	5	1	Melianthus	14	3
Hedera	5	1	Lamium	14	1	Meliſſa	14	1
Hedyſarum	17	3	Lantana	14	2	Melo	21	10
Helenium	19	2	Lapſana	19	1	Melongena	5	1
Helianthemum	13	1	Larix	21	9	Melothria	3	1
Helianthus	19	3	Laſerpitium	5	2	Meniſpermum	6	3
Helicteres	20	6	Lathyrus	17	3	Mentha	14	1
Heliocarpos	11	2	Lavandula	14	1	Mentzelia	13	1
Heliotropium	5	1	Lavatera	16	3	Mercurialis	22	8
Helleborus	13	7	Laurus	9	1	Meſembryanthemum	12	4
Hemerocallis	6	1	Lawſonia	8	1			
Hepatica	13	7	Ledum	10	1	Meſpilus	12	4
Hermannia	16	1	Leontice	6	1	Micropus	19	4
Hermodactylus	3	1	Leonurus	14	1	Milium	3	2
Hernandia	21	3	Lepidium	15	1	Milleria	19	4
Herniaria	15	2	Leucojum	6	1	Mimoſa	13	1
Heſperis	15	2	Lichen	13	7	Mimulus	14	2
Hibiſcus	16	3	Liguſticum	5	2	Mirabilis	5	1
Hieracium	19	1	Liguſtrum	2	1	Mitella	10	
Hippocaſtanum	7	1	Lilium	6	1	Mollugo	3	3
Hippocratea	21	1	Limodorum	20	1	Molucella	14	1
Hippomane Appen.			Limon	10	2	Momordica	21	10
Hippophae	21	4	Limonium	5	5	Monarda	2	1
Holcus	23	1	Linaria	14	2	Morina	2	1
Hordeum	3	2	Linum	5	5	Morus	21	4
Horminum	14	1	Lippia	14	2	Muntingia	13	1
Hottonia	5	1	Liquidamber	21	8	Muſa	23	1
Hura	21	9	Lithoſpermum	5	1	Muſcari	6	1
Hyacinthus	6	1	Lobelia	19	5	Myagrum	15	1
Hydrangea	10	2	Lonchitis	24	1	Myrica	22	4
Hydrophyllon	5	1	Lonicera	5	1	Myrtus	12	1
Hymenæa	10	1	Loranthus	6	1	Napœa	16	3
Hyoſcyamus	5	1	Lotus	17	3	Narciſſus	6	1
Hypecoum	4	2	Ludvigia	4	1	Naſturtium	15	1
Hypericum	18	3	Luffa	21	10	Nepeta	14	1
Hyſſopus	14	1	Lunaria	15	1	Nerium	5	1
Jaſminum	2	1	Lupinus	17	3	Nicotiana	5	1
Jatropha	21	9	Lupulus	22	5	Nigella	13	5
Iberis	15	1	Lychnis	10	5	Nyctanthes	2	1
Ilex	4	3	Lycium	5	1	Nymphæa	13	1
Impatiens	19	5	Lycoperſicon	5	1	Nyſſa	23	2
Imperatoria	5	2	Lyſimachia	5	1	Ocymum	14	1
Inga	13	1	Lythrum	11	1	Œnanthe	5	2
Inula	19	2	Magnolia	13	7	Œnothera	8	1
Johnſonia	4	1	Malope	16	3	Oldenlandia	4	1
Ipomoea	1	1	Malpighia	10	3	Olea	2	1
Iris	3	1	Malva	16	3	Onobrychus	17	3
Iſatis	15	2	Malus	12	4	Ononis	17	3
Iſopyrum	13	7	Mammea	13	1	Onopordum	19	1
Itea	5	1	Mandragora	5	1	Ophrys	20	1
Juglans	21	8	Maranta	1	1	Opuntia	12	1
Juncus	6	1	Marrubium	14	1	Orchis	20	1
Juniperus	22	11	Martynia	14	2	Origanum	14	1
Juſſiæa	10	1	Matricaria	19	2	Ornithogalum	6	1
Juſticia	2	1	Maurocenia	5	3	Ornithopus	17	3
Ixia	3	1	Meadia	5	1	Orobus	17	3

Genus.	Claſs.	Order.
Oryza	6	2
Oſteoſpermum	19	4
Oſyris	22	3
Othonna	19	4
Oxalis	10	5
Padus	12	1
Pæonia	13	2
Paliurus	5	1
Palma Appendix		
Panax	23	2
Pancratium	6	1
Panicum	3	2
Papaver	13	1
Parietaria	23	1
Paris	8	4
Parkinſonia	10	1
Parnaſſia	5	4
Paronychia	5	1
Parthenium	21	5
Paſſerina	8	1
Paſſiflora	20	4
Paſtinaca	5	2
Pavia	8	1
Paullinia	8	3
Peganum	11	1
Pentapetes	16	3
Pereſkia	12	1
Periclymenum	5	1
Periploca	5	2
Perſea	9	1
Perſica	12	1
Perſicaria	8	3
Petaſites	19	2
Petiveria	6	4
Petrea	14	2
Peucedanum	5	2
Phaca	17	3
Phaſeolus	17	3
Philadelphus	12	1
Phillyrea	2	1
Phlomis	14	1
Phlox	5	1
Phylica	5	1
Phyllanthus	21	3
Phyllis	5	2
Phyſalis	5	1
Phytolacca	10	5
Piercea	4	1
Pimpinella	5	2
Pinus	24	9
Piper	2	3
Piſonia	22	5
Piſtacia	22	3
Piſum	17	3
Platanus	21	8
Plumbago	5	1
Plumeria	5	1
Podophyllum	13	1
Poinciana	10	1
Polemonium	5	1
Polianthes	6	1
Polium	14	1
Polygala	17	2
Polypodium	24	1
Pontederia	6	1
Populus	22	7
Porrum	6	1
Portulaca	11	1
Potentilla	12	5
Poterium	21	8
Praſium	14	1
Prenanthes	19	1
Primula	5	1
Prinos	6	1
Protea	4	1
Prunella	14	1
Prunus	12	1
Pſidium	12	1
Pſoralea	17	3
Ptelea	4	1
Pulegium	14	1
Pulmonaria	5	1
Pulſatilla	13	7
Punica	12	1
Pyrola	10	1
Pyrus	12	4
Quercus	21	8
Randia	5	1
Ranunculus	13	7
Rapa	15	2
Raphanus	15	2
Rapunculus	5	1
Rapuntium	19	5
Rauvolfia	5	1
Reſeda	11	3
Rhamnus	5	1
Rheum	9	2
Rhexia	8	1
Rhinanthus	14	2
Rhodiola	22	7
Rhododendron	10	1
Rhus	5	3
Ribes	5	1
Ricinus	21	9
Rivinia	4	1
Robinia	17	3
Rondeletia	5	1
Roſa	12	5
Roſmarinus	2	1
Royena	10	2
Rubia	4	1
Rubus	12	5
Rudbeckia	19	3
Ruellia	14	2
Rumex	6	3
Ruſcus	22	12
Ruta	10	1
Ruyſchiana	14	1
Saccharum	3	2
Sagittaria	21	8
Salix	22	2
Salſola	5	2
Salvia	2	1
Sambucus	5	3
Samolus	5	1
Samyda	11	1
Sanguinaria	13	1
Sanguiſorba	4	1
Sanicula	5	2
Santolina	19	1
Sanindus	8	1
Saponaria	10	2
Sapota	5	1
Sarracena	13	1
Satureja	14	1
Satyrium	20	1
Saururus	6	3
Saxifraga	10	2
Scabioſa	4	1
Scandix	5	2
Schinus	10	1
Scilla	6	1
Sclarea	2	1
Scolymus	19	1
Scorpiurus	17	3
Scorzonera	19	1
Scrophularia	14	2
Scutellaria	14	1
Secale	3	2
Securidaca	17	3
Sedum	10	5
Selago	14	2
Selinum	5	2
Sempervivum	11	5
Senecio	19	2
Senna	10	1
Serapias	20	1
Serratula	19	1
Seſamum	14	2
Seſeli	5	2
Sherardia	4	1
Sicyos	21	10
Sida	16	3
Sideritis	14	1
Sideroxylum	5	1
Sigeſbeckia	19	2
Silene	10	3
Siler	5	2
Silphium	19	4
Sinapis	15	2
Siſon	5	2
Siſymbrium	15	2
Siſyrinchium	20	2
Sium	5	2
Smilax	22	6
Smyrnium	5	2
Solanum	5	1
Soldanella	5	1
Solidago	19	2
Sophora	10	1
Sorbus	12	3
Spartium	17	3
Speragula	10	4
Spermacoce	4	1
Sphæranthus	19	2
Sphondylium	5	2

Genus.	Claſs.	Order.
Spigelia	5	1
Spinacia	22	5
Spiræa	12	4
Stachys	14	1
Stœhelina	19	1
Stapelia	5	2
Staphylæa	5	3
Statice	5	5
Stewartia	16	3
Stoebe	19	1
Stoechas	14	1
Stratiotes	13	6
Styrax	11	1
Suriana	5	5
Symphytum	5	1
Syringa	2	1
Tabernæmontana	5	1
Tagetes	19	2
Tamarindus	3	1
Tamarix	5	3
Tamus	22	6
Tanacetum	19	2
Tarchonanthus	19	1
Taxus	22	11
Telephium	5	3
Tetracera	13	4
Tetragonia	12	4
Tetragonotheca	19	2
Teucrium	14	1
Thalictrum	13	7
Thapſia	5	2
Theligonium	21	8
Theobroma	18	1
Thlaſpi	15	1
Thuya	21	9
Thymbra	14	1
Thymus	14	1
Tiarella	10	2
Tilia	13	1
Tithymalus	11	3
Toluifera	10	1
Tordylium	5	2
Tormentilla	12	5
Tournefortia	5	1
Toxicodendron	5	3
Trachelium	5	1
Tradeſcantia	6	1
Tragacantha	10	5
Tragia	21	3
Tragopogon	19	1
Tribulus	10	1
Trichoſanthes	21	10
Trichoſtema	14	1
Tridax	19	2
Trifolium	17	3
Trigonella	17	3
Trillium	6	3
Trioſteum	5	1
Triticum	3	2
Triumfetta	11	1
Trollius	13	7
Tropœolum	8	1
Tulipa	6	1
Tulipifera	13	7
Turnera	5	3
Turritis	15	2
Tuſſilago	19	2
Vaccinium	8	1
Valeriana	3	1
Vanilla	20	2
Vella	15	1
Veratrum	23	1
Verbaſcum	5	1
Verbena	2	1
Verbeſina	19	2
Veronica	2	1
Viburnum	5	3
Vicia	17	3
Vinca	5	1
Viola	19	5
Viſcum	22	4
Vitex	14	2
Vitis	5	1
Volkameria	14	2
Ulex	17	3
Ulmus	5	2
Urena	16	3
Urtica	21	4
Uvularia	6	1
Waltheria	16	1
Watſonia	3	1
Xanthium	21	1
Xanthoxylum	5	3
Xeranthemum	19	2
Ximenia Appendix		
Xiphion	3	1
Yucca	6	1
Zea	21	3
Ziziphora	2	1
Ziziphus	5	1
Zygophyllum	10	1

Plate. 1.



THE

GARDENERS DICTIONARY.

ABELE Tree. *See* Populus.

ABIES; The Fir-tree. In *French* Sapin and Avet.

The *Characters* of this tree are,

It hath male Flowers, which are produced at remote Diſtances from the Cones on the ſame Tree. Theſe are compoſed of many Stamina joined in a Column, ſupporting erect Summits, and are diſpoſed in a conical Spike. The Female Flowers are alſo collected in a ſcaly Cone; each Scale having generally two Flowers. Theſe have no Petals, but from the Embryo ariſes a ſingle Style, crowned with a blunt Stigma. The Embryo afterwards turns to an oblong Seed or Nut, incloſed between the Scales of the Cones, each Scale having for the moſt Part two Seeds under it. To this is to be added, that the leaves of the Tree are produced ſingle, whereas thoſe of the Pine have two or more Leaves ariſing from the ſame Sheath.

The *Species* of this Tree, which are at preſent to be found in the *Engliſh* Gardens, are,

1. ABIES *taxi folio, fructu ſurſum ſpectante. Tourn.* The Silver *or* Yew-leaved Fir Tree.
2. ABIES *tenuiori folio, fructu deorſum inflexo. Tourn.* The Common Fir *or* Pitch Tree; *ſometimes called,* The *Norway or* Spruce Fir.
3. ABIES *minor, pectinatis foliis, Virginiana, conis parvis ſubrotundis. Pluk. Alm. Virginian* Fir Tree with ſmall roundiſh Cones, *commonly called* Hemlock Fir.
4. ABIES *piceæ foliis brevibus, conis minimis. Rand.* The Pitch-leaved Fir Tree, with ſmall Cones, *commonly called,* The *Newfoundland* Black Spruce Fir.
5. ABIES *piceæ foliis brevioribus, conis parvis biuncialibus laxis. Rand.* The ſhorteſt Pitch-leaved Fir Tree, with looſe Cones, *commonly called,* The *Newfoundland* White Spruce Fir.
6. ABIES *taxi foliis, odora, Balſami Gileadenſis. Raii. Hiſt. App.* The Balm of *Gilead* Fir.
7. ABIES *orientalis, folio brevi & tetragono, fructu minimo, deorſum inflexo. T.* Eaſtern Fir Tree, with ſhort ſquare Leaves, and ſmall Fruit hanging downward.
8. ABIES *major Sinenſis, pectinatis taxi foliis ſubtus cæſiis, conis grandioribus ſurſum rigentibus, foliorum & ſquamarum apiculis ſpinoſis. Pluk. Almath.* Great Fir Tree of *China,* with Yew Leaves, large Cones growing upright, and the Points of the Leaves prickly.
9. ABIES *maxima Sinenſis, pectinatis taxi foliis, apiculis non ſpinoſis, Pluk. Almath.* Greateſt *China* Fir Tree with Yew Leaves not prickly at their Points.

The 1ſt and 2d Sorts of Fir are very common in moſt Gardens, and Plantations of ever-green Trees.

The 1ſt grows in great Plenty about *Straſburg,* and ſome other Parts of *Germany*; from whence the Turpentine is brought to *England.* But the moſt beautiful of theſe Trees are growing upon *Mount Olympus,* from whence I have received Cones, which were upwards of a Foot in Length. Dr. *Tournefort,* in his Travels mentions the Firs of *Mount Olympus* as the moſt beautiful Trees in the *Levant.*

The 2d Sort which is very common in the Woods of *Norway* is the Tree that affords the white Deal, and grows in the Valleys where the Soil is very deep.

There are two or three Varieties of this Species, greatly differing in the Length and Colour of their Leaves, as alſo in the Size of their Cones, one of which has been diſtinguiſhed by Nurſery Gardeners, under the Title of *Long Coned Corniſh Fir.* The Leaves of this are whiter, and much longer than the others; the Cones are alſo of a greater Length than thoſe of the common Sort, ſo that by the Appearance of the Trees, any Perſon might ſuppoſe them to be a diſtinct Species. But from the Seeds which were carefully taken from this Sort, both Varieties of Plants have riſen, therefore they muſt be only deemed Varieties. There is alſo a 3d Variety, whoſe Leaves are ſmaller and ſhorter than the common Fir. The ſeeds of this have been ſent to *England* from the Northern Parts of *America,* but as the Trees advance in Growth, they approach ſo nearly to the common Sort, as not to be diſtinguiſhed; it may be preſumed therefore that they are the ſame.

From this Tree the Pitch is drawn, and hence it had the Title of the *Picea,* or *Pitch Tree.*

The 3d Sort was formerly growing in the Biſhop of *London's* Garden at *Fulham*; and of late Years there has been a great Number of the Trees raiſed from the Cones which have been brought from *America.* This Sort is very hardy in reſpect to Cold; but it ſhould have a moiſt Soil; for in dry land it makes very little Progreſs. It never grows to be a very large Tree in its native Soil, but ſhoots its Branches out horizontally to a great Diſtance, and is not ſo beautiful as the other Firs; the Leaves growing but thinly upon the Branches, and having ſo much the Reſemblance of thoſe of the Yew, that at a ſmall Diſtance they are not eaſily diſtinguiſhed from that Tree, even by Perſons of Skill.

The 4th Sort is a Native of *North America,* from whence the ſeeds have been brought to *England*, and great Numbers of the Plants raiſed. This is called by the Inhabitants in *America*, the *Black Spruce Fir*, probably from the Colour of the Bark, for the Leaves are not of a darker Colour than thoſe of the White. It grows naturally in Swamps and Bogs, and never becomes a very large Tree.

The 5th Sort is a Native of the ſame Country; but it grows naturally on the Mountains and higher Lands, and arrives to a much greater Size than the former. The Leaves of both theſe Trees are by the Inhabitants of *America* uſed indifferently for the making of *Spruce Beer*, from whence they had the Appellation of *Spruce Tree*. There were many Years ago ſome Plants of this Sort growing in the Gardens of the Biſhop of *London* at *Fulham*, in thoſe of Mr. *Reynoldſon* at *Hillendon* near *Uxbridge*, and Mr. *Darby* Gardener at *Hoxton*, but theſe have been long deſtroyed; ſo that in the Gardens near *London*, there are not any of theſe Trees which are much above thirty Years Growth. Thoſe in the elegant Gardens of his Grace the Duke of *Argyle*, at *Whitton* near *Hounſlow*, are by much the fineſt I have ſeen. But there muſt be ſome Trees of a greater Age in *Devonſhire*, unleſs they have been deſtroyed: for in the Year 1724, I received ſome Branches of this Tree full of Cones, from a Gentleman of that Country, who had ſeveral of the Trees then growing, which were of a conſiderable Size. Theſe had been raiſed from Seeds brought from *Newfoundland*, from whence there has been of late Years a great Number of the Cones brought to *England*, ſome of which were called *Red Spruce*; but the Plants which have been raiſed from the Seeds, are ſo like thoſe of the Black, as not to be diſtinguiſhed from it; nor can I perceive any Difference in their Cones, ſo that it may be ſuppoſed they are the ſame.

From both theſe Species of Fir, exudes a fine clear Turpentine of a ſtrong Scent, which the Native *Indians* uſe to cure green Wounds, and alſo for ſome internal Diſorders: and of late Years the *Engliſh* Phyſicians in *North America*, have likewiſe adopted it into their Practice.

The 6th Sort is a Native of *America*, from whence the Seeds have been brought into *Europe*. This Tree abounds with a clear fragrant Turpentine, commonly ſold in *England* for the Balm of *Gilead*; and from hence the Title of Balm of *Gilead* has been given to this Species of Fir, tho' the Tree from whence the true Balm of *Gilead* is taken, is near of kin to the Terebinthus or Piſtachia-nut.

This Sort of Fir, while young, is the moſt beautiful of any of the Kinds yet known; but in almoſt all the Places where theſe Trees have been planted, they have not continued fair above ten or twelve Years; and where they have thriven moſt while young, there they have ſooneſt decayed. The firſt Appearance of their Decay is, their producing a great Number of Cones, and Male Flowers; ſoon after which, their leading Shoot turns crooked, and a great Quantity of Turpentine runs down their Stems; then their Leaves fall off, and, in a year or two, they die. This ſudden Decay of the Trees has brought them into Diſrepute, ſo that few Perſons at preſent care to plant them; for the ſame has happened in moſt Soils and Situations; nor have I ſeen any free from this Accident, except at his Grace the Duke of *Bedford*'s at *Woburn-Abbey*; where, in that noble Plantation of ever-green Trees, are Numbers of this Sort of conſiderable Growth which yet remain in good Health. The Soil in which theſe are planted, is a deep Sand, ſo that their roots may ſtrike deep, without meeting any Obſtruction, to which the preſent Vigour of the Trees is imputed.

The 7th Sort was diſcovered in the *Levant* by Dr. *Tournefort*, who ſent the Cones to the royal Garden at *Paris*. This Kind of Fir is very common in the Mountains of the *Archipelago*, from whence the Cones may be eaſily procured. It has alſo been found in *Iſtria* and *Dalmatia*; and it may probably grow in many other Places.

The other two Sorts are very common in *China*, from whence I have received Seeds and Branches of both Kinds; but the Seeds, having been taken out of their Cones before they were brought over, were dried up, and loſt their Germ, ſo that none of them grew: whoever, therefore, is deſirous to propagate any of the coniferous Trees, ſhould have the Cones gathered when ripe, before they open and let out the Seeds, in which they will continue freſh a long Time. Whereas if the Seeds are taken out of the Cones, they will not retain their growing Quality, ſo as to be tranſported from one Country to another, at any conſiderable Diſtance.

Theſe Sorts are, at preſent, very rare in *England*: the 8th was formerly growing in the Garden of Mr. *Edward Morgan* in *Weſtminiſter*, a Branch of which was given Mr. *Ray* by Mr. *Doody*, a very curious Botaniſt; but this Tree has been deſtroyed many Years ago. The Leaves of it are much longer than thoſe of any other Kind of Fir yet known; but as there have not been any Cones of theſe Trees brought into *England*, I know not how they differ from thoſe of the other Sorts in this reſpect. The Seeds indeed, which I have received, were larger than thoſe of any other Fir I have yet ſeen.

Theſe Trees are all raiſed from Seeds taken out of their polyſpermous Cones. The way to get out the Seeds is, by expoſing the Cones to a gentle Fire, which will cauſe their ſquamous Cells to open, and readily emit their Seeds: But they ſhould not be expoſed to too great a Heat. This ought not to be done until you are ready to ſow them; which is beſt performed in the latter End of *March*.

Theſe Plants ſhould be all raiſed in a Nurſery, where they may be protected from the Birds; otherwiſe they will be in Danger of being deſtroyed when they firſt come up. For as they bring up the Huſk of the Seed on the Top of the Plant, the Birds in picking off the Huſk will break off the Tops of the Plants, whereby a whole Bed may be loſt in a few Hours, if not carefully guarded from them.

The beſt Time for ſowing theſe Seeds is about the latter End of *March*, or the Beginning of *April*, according as the Seaſon is more or leſs forward, on a Bed of light Earth, covering the Seeds about half an Inch deep with the ſame Sort of Mould. If this Bed be netted over to keep off the Birds, it will be a ſure Method of preventing them from deſtroying the young Plants at their firſt coming out of the Ground; at

which

Plate. 2.

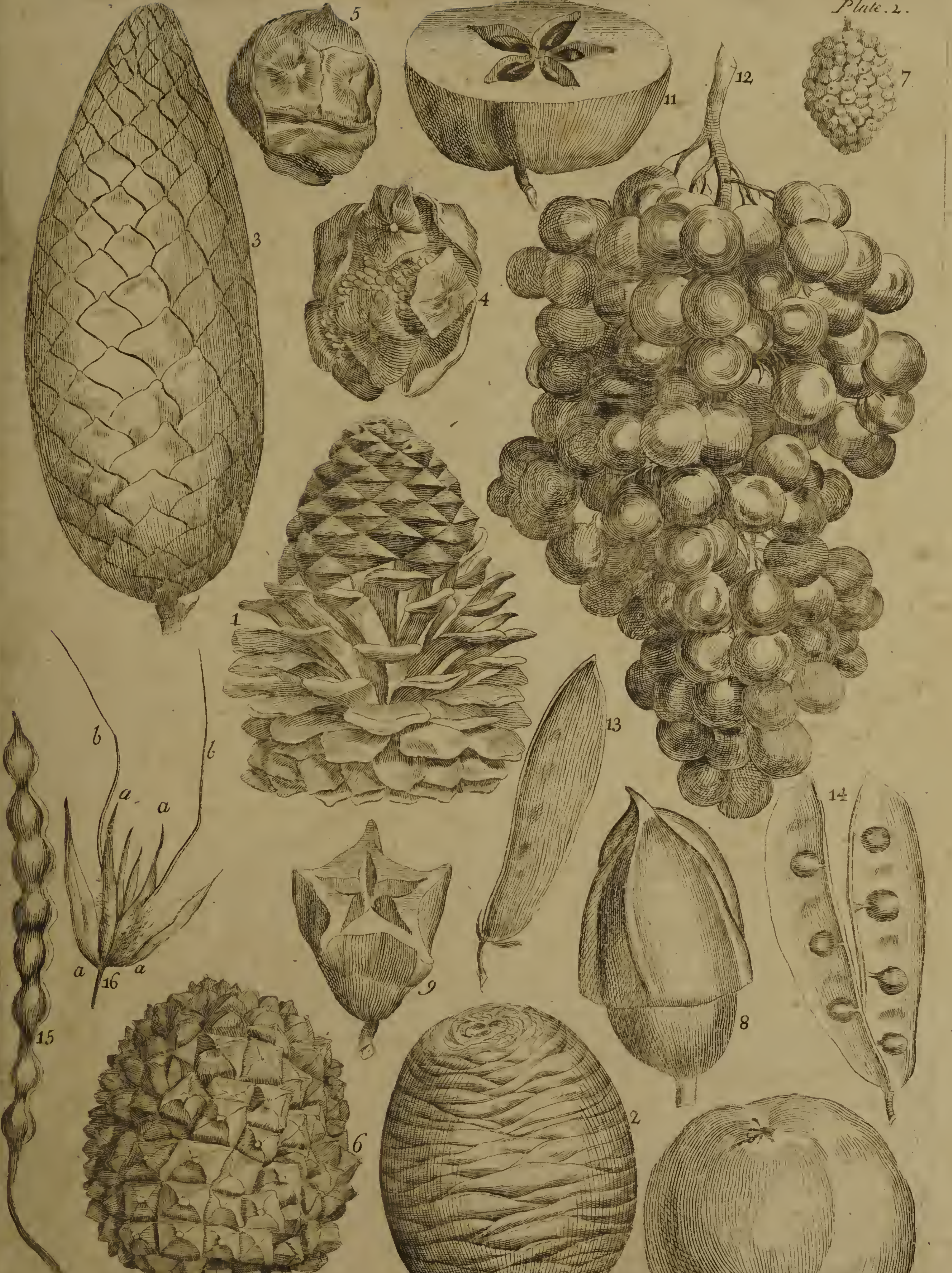
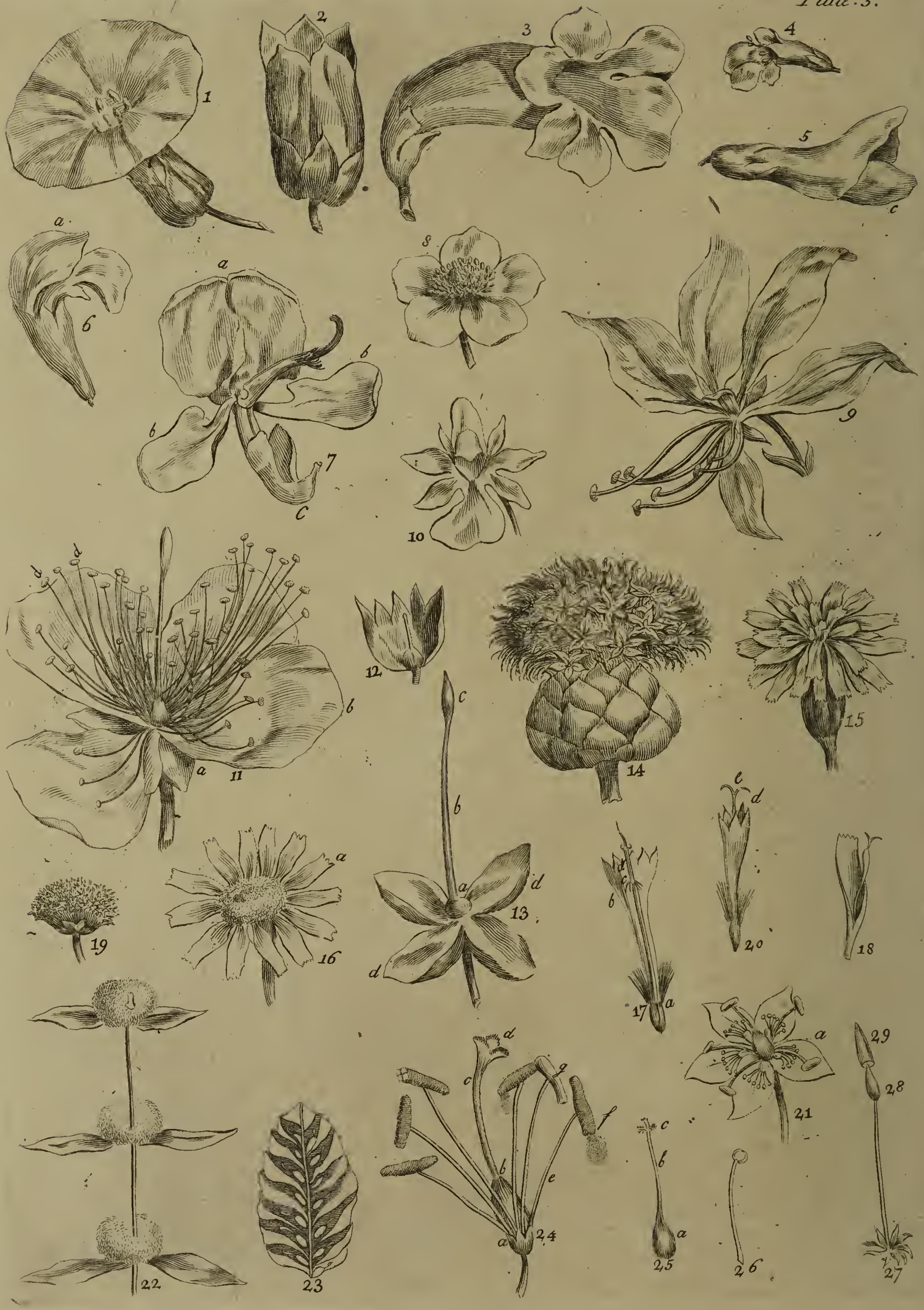


Plate. 3.



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which Time they ſhould likewiſe be ſcreened from the Sun in the Middle of the Day, by covering the Beds with Mats; becauſe too much Sun frequently deſtroys theſe Plants when they are young. In this Bed the Plants ſhould remain until the following Spring; when there ſhould be a Number of Beds prepared in the Nurſery to receive thoſe Seedlings; and in the Beginning of *April* they ſhould be tranſplanted into the Beds, at the Diſtance of ſix Inches Row from Row, and in the Rows at three Inches aſunder, ſetting them in a Quincunx Order. In removing theſe Plants, they ſhould be very carefully raiſed up with a Trowel, ſo as not to break off the Fibres of their Roots; and they ſhould be kept as little Time out of the Ground as poſſible. During the Time too they are out, their Roots ſhould be covered, to prevent the Wind from drying their Fibres; and in planting, the Earth ſhould be preſſed cloſe to their Roots, to prevent the Air from penetrating to them. If the Seaſon proves dry, it will be proper to water the Plants every Week one or twice, according to the Warmth of the Weather; and the Beds ſhould be covered with Mats, to ſcreen the Plants from the Sun, and drying Winds, until they have taken good Root; after which Time they will require little farther Care, than to keep them clear from Weeds. In theſe Beds the Plants may remain two Years; at the End of which they ſhould be tranſplanted into an open Spot of Ground; for their Roots will in that Time meet quite over the Beds. This Ground ſhould be well trenched and cleared from all noxious Weeds, and made level to receive the Plants, which ſhould be tranſplanted about the Beginning of *April*, juſt before they begin to ſhoot; and if the Weather prove moiſt, it will be of great Advantage to the growing of the Plants. In removing them out of the Beds, great Care ſhould be taken, not to tear off or injure their Roots; nor ſhould too many of the Plants be taken up at one Time; but rather plant them as faſt as they are taken up, that they may be as little Time out of the Ground as poſſible. For the drying Winds, which uſually happen at this Seaſon, will greatly injure the Roots of theſe Plants, if much expoſed thereto.

The Diſtance at which they ſhould be placed in the Nurſery, ſhould be four Feet Row from Row, and in the Rows two Feet aſunder. This Diſtance may by ſome be thought too great; but if it be conſidered how much their Roots ſpread in the Ground, as alſo that when they are planted nearer together, it will be very difficult to take up the Plants again without cutting and tearing off their Roots, eſpecially if they are not all taken up clean at the ſame Time; theſe Conſiderations muſt have greater Weight than that of the Loſs of a little Ground, with all who have any Regard to the future Welfare of the Plants. In planting them, it will be adviſeable to draw a Line croſs the Ground, and to dig out a Trench of a Foot wide thereby, into which the Plants may be placed at the Diſtance of two Feet aſunder. Then fill up the Earth into the Trench, covering the Roots of the Plants with the fineſt part of it, and ſcattering it carefully between the Roots; and when the whole Trench is filled in, preſs the Earth gently down with your Feet; but by no means tread it too hard, eſpecially if the Ground be ſtrong, or apt to bind too cloſe.

When the Plants are thus ſet, if the Seaſon ſhould prove dry, they ought to be watered, in order to ſettle the Earth to their roots; and, if this be repeated three or four Times (if the Seaſon ſhould continue dry) it will greatly promote their taking new Root, and ſecure them from the Injuries of the drying Winds.

In this Nurſery the Plants may remain two or three Years, according to the Progreſs they ſhall have made; and during this Time, the Ground between the Plants ſhould be conſtantly kept clean from Weeds, and dug between the Rows every Spring; in doing of which, Care muſt be taken not to cut or injure the Roots of the Plants: This is all the Culture they will require during their Continuance in the Nurſery. When tranſplanted into the Places where they are to remain, the neceſſary Care to be taken is, in taking them up, not to injure or cut off their Roots, and to let them be as little Time out of the Ground as poſſible; and when they are out, in particular, to guard their Roots from the drying Winds. The ſureſt Time for removing theſe Trees is about the Beginning of *April*. For though they may be, and often are, removed with Succeſs at *Michaelmas*, yet the Spring is the more ſure Seaſon, eſpecially in moiſt Land.

Moſt of the Kinds of Firs may be removed at the Height of ſix or ſeven Feet; but thoſe of two Feet high are much better, and will in a few Years gain the Aſcendent of thoſe taller Trees: I would not therefore, adviſe the tranſplanting of theſe Trees when they are much above two Feet high, eſpecially if they have ſtood long in the Nurſery unremoved. For then their Roots will have extended themſelves to a great Diſtance, which will be cut in taking them out of the Ground; and where great Amputation is uſed either to the Roots or Branches of theſe Trees, the Quantity of Turpentine, which commonly iſſues from the Wounds, will greatly weaken the Trees. There is another Advantage alſo in planting them when ſmall, which is that of not requiring Staking to ſecure them from being blown down by ſtrong Winds, which in tall Trees is a great Trouble and Expence. And whoever will give themſelves the Pains to obſerve, how much Trees of two Feet high exceed in Growth thoſe which are removed at a much greater Height, will, I am ſure, be convinced of the Truth of what is here ſaid.

Theſe Trees are chiefly cultivated for ever-green Plantations in Gardens and Parks, where by their perpetual Verdure, they have a pretty effect in Winter; and in Summer, are not without their Beauty, by the Contraſt in the different Shades of Green between them and the other Trees. But as neither of theſe Sorts of Fir are equal to the *Scotch Pine* in the Goodneſs of the Timber; they are not ſo profitable for large Plantations, which are deſigned for Improvement more than Beauty.

The common Spruce Fir is what the white Deals are cut from. Theſe Trees grow in the deep ſtrong Soils of *Norway* and *Denmark*; and will grow likewiſe in almoſt any Soil or Situation in *England*, provided it be not within the Reach of the Smoke of great Cities, which is very injurious to all theſe Sorts of Trees; nor do they thrive near ſo well in dunged Land, as in freſh uncultivated Soils. The diſrepute theſe Trees have been under for ſome Years paſt, has been occaſioned by their being planted too cloſe together, or too near other Trees, whereby the Air has been excluded from their Branches, which has occaſioned moſt of their under Branches to decay, ſo that when viewed from the Ground under their Branches, they have a greater Appearance of dead than living Trees. But where they have been allowed a good Diſtance, and planted in a ſtrong freſh Soil, they have had their Branches quite freſh within ſix or eight Feet of the Ground, and that too, in Trees upward of ſixty Feet high. Theſe Trees therefore, ſhould not be planted nearer than twelve Feet apart; nor ſhould they be ſo near where the Plantation is more than three Rows deep. In this Caſe, eighteen or twenty Feet aſunder will be full near enough, eſpecially where the Trees are deſigned to have their Branches feathered near the Ground, in which one of the Beauties of theſe Trees conſiſts.

The Silver Fir requires a ſtronger Land than the Spruce; for in dry Ground they ſeldom make any great Progreſs; and many Times, even after they have arrived to a conſiderable Size, are deſtroyed by very dry Seaſons, where the Soil is ſhallow, or too dry. But when they are planted in a proper Soil, they grow to a very large Size, and are extremely beautiful, having the under Side of their Leaves white, and the upper Side of a dark green Colour.

This Sort of Fir, however, is frequently injured by Froſts, when they happen late in the Spring, eſpecially while the Plants are young. For when theſe are planted in a warm Situation, they are apt to ſhoot pretty early, and if any ſharp Froſts happen after they have puſhed, the young ſhoots are killed, ſo that they loſe a Year's Growth, and are rendered ſo very unſightly, that many times they have been pulled up and thrown away. In cold Situations, however, where they do not begin to ſhoot ſo early, they are not ſubject to this Diſaſter; and in many ſuch Places, theſe Trees grow to a large Size. I have ſometimes ſeen ſome fine Trees of this Sort of Fir, which grew upon natural Bogs, where, by extending their Roots, they had drained the Ground to a conſiderable Diſtance round them. There are ſome Trees of this Kind now growing in *England*, which are upwards of ninety Feet high.

The Directions before given are for the Culture of the common *Spruce* and *Silver Firs*, for the other Sorts will require a different Treatment, which we ſhall next particularly mention, and if properly obſerved, there will be no Doubt of Succeſs, provided the Seeds are good, for the Author has frequently made Trial of it to Advantage.

About the Middle, or latter End of *March* (according to the Forwardneſs of the Seaſon, by which every Perſon muſt be guided) make a gentle hot Bed, in Length proportional to the Quantity of Seeds to be ſown, and where there are Frames which can be ſpared for this Purpoſe, theſe may be placed upon the hot Bed; but where theſe are wanting, the Bed ſhould be cradled over with Hoops, that they may be covered with Mats or Canvaſs; then plunge the Bed full of halfpenny Pots. Theſe Pots ſhould be filled with light undunged Earth, and the Interſtices between the Pots may be filled up with any other Earth which is neareſt to the Place; then ſow the Seeds in the Pots, covering them about Half an Inch with the ſame light Earth. After this the Bed muſt be covered with Glaſſes: where they are under Frames, or in the other Caſe, either with Mats or Canvaſs; and where they have Glaſſes, theſe ſhould be tilted up every Day to admit freſh Air, and when there is much Sun, the Glaſſes ſhould be covered in the Heat of the Day to ſhade the Bed. This will prevent the Earth from drying too faſt, which would prove hurtful to the Seeds; nor ſhould the Seeds have too much Wet, which would be equally injurious to them: Therefore the earth ſhould be but ſeldom watered, and it muſt never be given in great Quantities. With this Management the Plants will appear in five or ſix Weeks Time, when they muſt be carefully guarded from Birds, as was before directed for the Common Sorts, and alſo ſcreened from the Sun in the Middle of the Day; but they muſt now have freſh Air admitted to them at all times when the Weather will permit. They may alſo be allowed to receive any gentle Showers of Rain, but they ſhould not have too great Plenty of Moiſture, which will frequently rot the tender Stems of the Plants, and cauſe them to drop. Upon the judicious Care of this, depends the whole ſucceſs; for I have frequently ſeen great Numbers of theſe Plants deſtroyed in one Day, by being either too much expoſed to the ſun, or from having too much Wet.

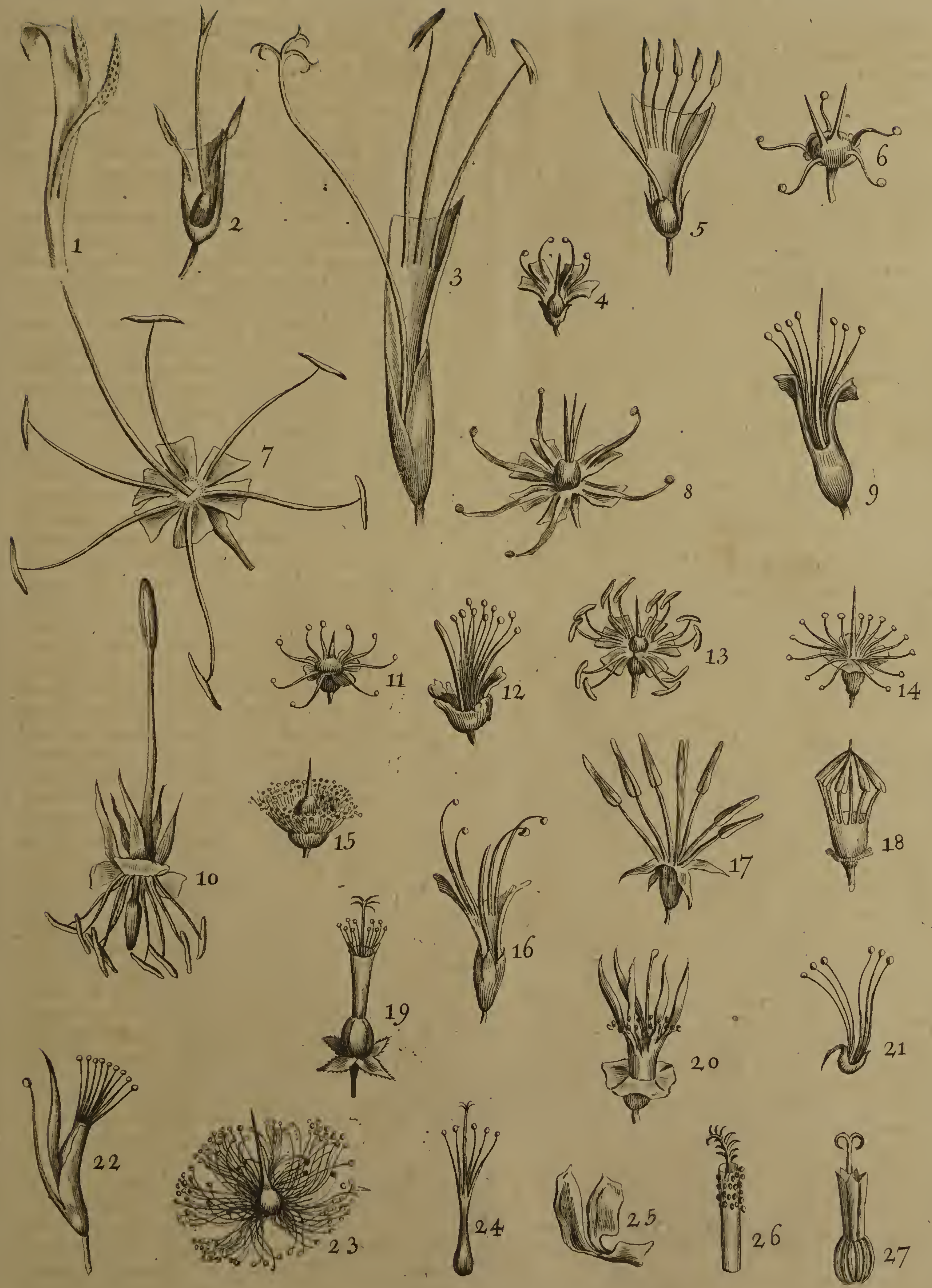
It may, perhaps, ſeem ſtrange to many, that I ſhould direct the Sowing the Seeds of theſe Trees which are ſo very hardy upon a hot Bed; but from many Trials, I have always found they have ſucceeded much better this Way, than in any other; for the gentle Warmth of the Bed will not only cauſe the Seeds to vegetate much ſooner than they would naturally do in the cold Ground, but the Plants will alſo riſe much ſtronger, and, conſequently, be in leſs Danger of rotting in their Shanks. And as the Warmth of the Bed is only to bring up the Plants, ſo there ſhould be but little Dung employed in making it; for after the Plants are up, they muſt be inured to the open Air, and treated as hardily as the common Sorts.

There may be others, perhaps, who will object to the Directions given for ſowing the Seeds in ſuch ſmall Pots, becauſe, where there is any Quantity of the Seeds, it is uſual to ſow them in Boxes, or large Pots, but I can from many Years Experience aver, that moſt Sorts of Seeds ſucceed better when ſown in ſmall Pots, than in Boxes, or larger ones, and therefore recommend this Practice.

As the Seeds of the *Hemlock Fir* will frequently remain in the Ground four or five Months, ſo the Pots, in which they are ſown, ſhould not be diſturbed, if the Plants come not up as ſoon as may be expected; for unleſs, upon ſtirring the Ground, the Seeds are found to be decayed, there may be Hopes of their growing the ſecond Spring; for I have ſometimes had the Seeds remain a whole Year in the Ground, and afterwards come up very well; this Caution is given to prevent the Pots from being too haſtily turned out.

The Plants of theſe Sorts of *Fir* muſt be afterwards treated in the ſame Way as the common Sorts, with this Difference only, that they ought to be tranſplanted into

Plate 4.



a more ſhady Situation, and moiſter Soil. For while theſe Plants are young, they will not thrive if they are much expoſed to the Sun, or in a dry Soil; but when they have obtained Strength, they will bear the open Sun very well, and in a moiſt Soil will make a great Progreſs, whereas in dry Ground they frequently ſtint, and produce Plenty of Male Flowers and Cones, by the Time they get to the Height of four or five Feet.

The two *American Spruce*, and the *Balm of Gilead Firs*, are by much the moſt beautiful Sorts yet known, their Branches being more cloſely garniſhed with Leaves placed on every Side of them, and of a brighter Green than the common Sorts; conſequently they are better adapted for ſuch Plantations as are much in Sight. Dr. *Linnæus* has ſuppoſed theſe to be only Varieties of the common *Spruce* and *Silver Firs*, but whoever has examined their Branches and Cones, can have no Doubt of their being diſtinct Species; nor have I ever obſerved them to vary, the Seeds always producing the ſame Kind of *Fir*, as the parent Tree from whence they are taken. As theſe are all Natives of *America*, where neither of the *European* Kinds are found growing naturally, we may be aſſured they are a diſtinct Species.

The *Scotch* Fir (as it is uſually called) being a Pine, I ſhall refer that to its proper Genus of *Pinus*; under which Article all the ſeveral Sorts of *European* and *American* Pines are compriſed; and as their Culture is ſomewhat different from that of the Fir, the Method of propagating them will be there fully deſcribed.

The Seeds of all Sorts of Firs are eaſily taken out of their Cones, which are of a much looſer Texture than the Cones of the Pines; but as theſe ſo eaſily open with Heat, the Seeds generally drop out in hot Weather, and are thereby ſpoiled from growing ſoon after. The Cones of the Silver and Balm of *Gilead* Firs alſo, fall to pieces on the Trees, if not gathered by the Middle, or End of *October*, whereby all their Seeds will be loſt; whoever, therefore is deſirous of ſaving their Seeds, ſhould carefully watch the Time of their ripening.

When the Branches of theſe Trees are cut off, to trim them up to have Stems, it ſhould be done gradually, never cutting more than two Tier of Branches in one Year; for if too many Wounds are made at the ſame Time on theſe reſinous Trees, the Turpentine will iſſue out in ſuch Quantities as to weaken and check the Growth of them. The beſt Time for pruning theſe Trees is in *September*; at which Time they abound not ſo much in Turpentine as in the Spring; and, conſequently, do not bleed much. What flows too out at that Seaſon, is ſeldom more than neceſſary for covering the Wounds, to prevent the Wet and Cold of the ſucceeding Winter from penetrating the wounded Parts. Theſe Branches ſhould be cut cloſe to the Trunk.

ABROTANUM, or Southernwood.

This Plant is better known by its outward Appearance, than by any diſtinct Characters which can be given of it, agreeing in moſt Parts with the Wormwood, from which it is not eaſily ſeparated. As it has been diſtinguiſhed, however, from that Plant by all the antient Botaniſts, and the *Engliſh* Name of Southernwood being well known, I ſhall continue this Diſtinction, to avoid confounding thoſe Readers who are leſs acquainted with botanical Niceties.

The *Species* are,

1. ABROTANUM *mas anguſtifolium majus. C. B. P.* Greateſt narrow leaved Southernwood.
2. ABROTANUM *latifolium inodorum. C. B. P.* Broad leaved Southernwood without Scent.
3. ABROTANUM *mas anguſtifolium incanum. C. B. P.* Hoary narrow leaved Southernwood.
4. ABROTANUM *campeſtre, cauliculis albicantibus.* Fine leaved wild Southernwood, with whitiſh Stalks.
5. ABROTANUM *campeſtre, cauliculis rubentibus. C.B.P.* Fine leaved wild Southernwood, with reddiſh Stalks.
6. ABROTANUM *campeſtri ſimile Tingitanum. H. L. Tangier* Southernwood, reſembling the wild Sort.
7. ABROTANUM *campeſtre incanum, carlinæ odore, C. B. P.* Hoary Field Southernwood, with a Smell like the Carline Thiſtle.
8. ABROTANUM *humile, corymbis majoribus aureis. H. R. Par.* Dwarf Southernwood, with large golden Flowers.
9. ABROTANUM *Hiſpanicum, abſinthii Pontici folio. Tourn. Spaniſh* Southernwood, with a *Pontic* Wormwood Leaf.
10. ABROTANUM *Hiſpanicum maritimum, folio craſſo ſplendente & rigido. Tourn. Spaniſh* Sea Southernwood, with a thick ſhining ſtiff Leaf.
11. ABROTANUM *mas ex Surinam, molli hirſutie caneſcens. P. A.* Hoary Male Southernwood from *Surinam.*
12. ABROTANUM *elatius ſubincanum, foliis creberrimis, ſecundum caulem in metæ formam faſtigiatis, Pluk. Almag.* Taller hoary Southernwood, with frequent Leaves gathered into a kind of Pyramid.
13. ABROTANUM *orientale annuum, abſinthii minoris folio. Tourn. Cor.* Annual Eaſtern Southernwood, with a Leaf of the leſſer Wormwood.
14. ABROTANUM *orientale, chamæmeli folio. Tourn. Cor.* Eaſtern Southernwood, with a Camomile Leaf.
15. ABROTANUM *Africanum, foliis argenteis anguſtis, floribus ſpicatis, capitulis copioſo tomento donatis, D. Sher. R. S. African* Southernwood, with narrow ſilver Leaves, ſpiked Flowers, and very woolly Heads.
16. ABROTANUM *Africanum, foliis argenteis anguſtis, floribus umbellatis, capitulis tomentoſis. Raii Sup. African* Southernwood, with narrow ſilver Leaves, umbellated Flowers, and woolly Heads.

The 1ſt, 2d, 3d, 4th, and 5th Sorts may be propagated by Slips, or Cuttings, planted the latter End of *March*, or the Beginning of *April*, on a Bed of freſh light Earth, obſerving to water them, until they have taken root, two or three times a Week, provided the Seaſon proves dry; and if they are ſhaded in the Middle of the Day, it will promote their taking Root.

The 1ſt Sort is commonly propagated by the Gardeners near *London*, to furniſh the Balconies and little Courts of the Citizens; for which Purpoſe this Plant is well adapted, as it endures the Smoke of *London* better than moſt other Plants; and the Leaves, when bruiſed, emit an agreeable Odour. This Sort was formerly uſed in Medicine, but of late has been expelled the Shops.

This is by Dr. *Linnæus* ſtiled *Artemiſia foliis ramoſiſſimis ſetaceis caule erecto fruticoſo, i. e.* Mugwort with ſtiff branching Leaves, and an upright woody Stalk.

The 2d and 3d Sorts are at preſent more rare in the

Engliſh Gardens, though equally hardy with the other; and may be planted for under Shrubs, in Quarters of low growing Trees, where, by the Diverſity of their Leaves, they will afford an agreeable Variety.

The 4th and 5th Sorts grow commonly in *Germany*, *Italy*, and *Narbonne*, by Way-ſides, and in barren Places; and are alſo found in *England* by the Way-ſide from *New-market* to *Lynn*, near a Village called *Elden*. Theſe ſeem to be but Varieties from each other, and only differ in the Colour of their Stalks. They are ſeldom preſerved in Gardens, unleſs by Botaniſts for Variety. Whoever is deſirous to have theſe Plants, may eaſily obtain them from the Places of their Growth, either the Plants, or the Seeds; but the Seeds ſhould be ſown ſoon after they are ripe; for being very light, will loſe their growing Quality, if kept long out of the Ground. Theſe Plants ſeldom continue above three or four Years, when tranſplanted into Gardens, ſo that new ones ſhould be raiſed from Seed to ſucceed them.

The 6th Sort is not ſo hardy as any of the former; for, being a Native of warm Countries, it requires to be ſheltered in Winter from the Froſt. This may be propagated as the former; but ſhould be kept in Pots, that they may be placed under a Frame in Winter, where they ſhould have as much free Air as poſſible in mild Weather; but in hard Froſts they ought to be covered with Glaſſes and Mats to ſecure them.

The 7th Sort ſhould be treated in the ſame manner as the 4th or 5th, and is equally hardy. Theſe will continue much longer on a dry barren Soil, than when they are planted in a rich Garden Earth.

The 8th, 9th, 10th, and 14th Sorts may be propagated by Seeds, or from Slips and Cuttings: if from Seeds, they ſhould be ſown on a warm Border of dry Earth early in the Spring; and when the Plants are come up, they muſt be conſtantly kept clear from Weeds. When the Plants are about four inches high, ſome of them may be removed into Pots, that they may be placed under Shelter in the Winter; and the reſt may be tranſplanted into a warm Border, obſerving to ſhade and water them until they have taken new Root; after which time, they will require no farther Care, but to keep them as before, clear from Weeds. Theſe Plants are ſometimes deſtroyed by ſevere Froſts, while they are young; but afterwards they will endure the Cold of our ordinary Winters extremely well, eſpecially if planted on a dry lean Soil. If you propagate theſe by Slips or Cuttings, they muſt be treated in the ſame manner as hath been directed for the common Sort.

The 11th and 12th Sorts are tenderer than any of the beforementioned. Theſe may be propagated either by Seeds, or from Slips, as the former: but they muſt be kept in Pots, and require a good Green-houſe in Winter, where they ſhould be permitted to enjoy as much free Air as poſſible in mild Weather.

The 13th Sort is an annual Plant, which rarely produces good Seeds in this Country. The ſureſt Method, however, of obtaining good Seeds is, to raiſe the Plants towards the latter End of Summer, and preſerve them through the Winter, which will cauſe them to flower early the following Summer, ſo that they will have time to perfect their Seeds; whereas thoſe which are raiſed in the Spring, will flower late in Autumn, and the cold Weather will come on before their Seeds have time to ripen.

The 15th and 16th Sorts rarely produce good Seeds in *Europe*; but may be eaſily propagated by Cuttings or Slips, which ſhould be planted in Pots filled with light freſh Earth, and plunged into a very moderate Hot-bed, obſerving to water and ſhade them until they have taken Root; after which they ought to be inured, by degrees, to bear the open Air; then they are to be taken out, and placed where they may have the Morning Sun, and be ſheltered at the ſame time from the ſtrong Winds. In this Situation they are to remain till *October*, when they ought to be removed into the Green-houſe, and placed where they may enjoy as much free Air as poſſible in mild Weather, failing not frequently to refreſh them with Water; Care muſt be alſo taken to ſecure them from the Froſt, otherwiſe they will be deſtroyed.

ABROTANUM FŒMINA. See *Santolina*.

ABSINTHIUM, Wormwood.

The *Characters* are,

There are many female and hermaphrodite Flowers included in the ſame ſcaly Empalement: The hermaphrodite Flowers occupy the Middle: Theſe are tubulous, conſiſting of one Leaf, which is divided into five Parts at the Top. The female Flowers are ranged round the Border. The Difference in the Characters of this and the Southernwood is very ſmall, the only Diſtinction between them is, that the Empalement of the Wormwood is more globular than that of the Southernwood, and the Seeds have ſmall Hairs fixed to their Bottom.

The *Species* are,

1. ABSINTHIUM *vulgare majus. J. B.* Common Wormwood.

2. ABSINTHIUM *Ponticum tenuifolium incanum. C. B. Pin.* True *Roman* Wormwood.

3. ABSINTHIUM *maritimum, lavendulæ folio. C. B. Pin.* Sea Wormwood, with Leaves like Lavender.

4. ABSINTHIUM *inſipidum, abſinthio vulgari ſimile. C. B. Pin.* The inſipid Wormwood is ſo like the common, as not eaſily to be diſtinguiſhed from it, but by ſmelling and taſting the Herb: this Sort is not common in *England*.

5. ABSINTHIUM *arboreſcens. L. I.* Tree Wormwood.

6. ABSINTHIUM *Ponticum montanum. C. B. P.* Common mountain Wormwood.

7. ABSINTHIUM *Ponticum Creticum, grati odoris. C. B. P. Candy Pontic* Wormwood, of a pleaſant Smell.

8. ABSINTHIUM *Ponticum tenuifolium, caulibus purpuraſcentibus, foliis ſupina parte viridioribus. C. B. P.* Narrow-leav'd *Pontic* Wormwood, with purpliſh Stalks, and Leaves greener on the Under-ſide.

9. ABSINTHIUM *Ponticum tenuifolium Auſtriacum. C. B. P. Auſtrian* Wormwood.

10. ABSINTHIUM *Ponticum repens vel ſupinum. C. B. P.* Creeping *Pontic* Wormwood.

11. ABSINTHIUM *maritimum, foliis ſuperioribus in aliquot lacinias diviſis. C. B. P.* Sea Wormwood, with the upper Leaves divided into ſome Jags.

12. ABSINTHIUM *Seriphium Germanicum. C. B. P. German* Sea-Wormwood.

13. ABSINTHIUM *Seriphium, Belgicum. C. B. P. Belgic* Sea Wormwood.

14. ABSINTHIUM *maritimum, Seriphio Belgico ſimile, latiore folio, odoris grati. Pluk.* Sea Wormwood, reſembling the *Belgic* Wormwood, with a broader Leaf, and a pleaſant Smell.

15. ABSINTHIUM *Seriphium Gallicum. C. B. P. French* Sea Wormwood.

16. ABSINTHIUM *Sanctonicum Gallicum. C. B. P. French* Wormwood.

17. ABSINTHIUM *Seriphium montanum candidum. C. B. P.* White Mountain Wormwood.

18. ABSINTHIUM *Alpinum incanum. C. B. P.* Hoary Wormwood of the *Alps.*

19. ABSINTHIUM *Alpinum candidum humile. C. B. P.* Dwarf white Wormwood of the *Alps.*

20. ABSINTHIUM *Seriphium Hiſpanicum, flore oblongo. Tourn. Spaniſh* Wormwood with an oblong Flower.

21. ABSINTHIUM *Halepenſe, grati odoris, comâ delicatiore. Pluk.* Wormwood of *Aleppo*, of a pleaſant Smell, with a delicate Spike.

22. ABSINTHIUM *Africanum arboreſcens, folio vermiculato incano. Oldenl. African* Tree Wormwood, with a hoary vermiculated Leaf.

23. ABSINTHIUM *Africanum ſpicatum, foliis tenuiſſimis breviſſimis integris. D. Sherard. Raii Supp.* Spiked *African* Wormwood, with narrow ſhort entire Leaves.

24. ABSINTHIUM *maritimum noſtras. D. Preſton. Raii Supp. Scotch* Sea Wormwood.

25. ABSINTHIUM *orientale fruticoſum incanum, amplo folio tenuiſſimè diviſo. Tourn. Cor.* Shrubby Eaſtern Wormwood, with large hoary Leaves finely divided.

26. ABSINTHIUM *orientale incanum, capillaceo folio, floribus in capitulum congeſtis. Tourn. Cor.* Hoary Eaſtern Wormwood, with a capillaceous Leaf, and Flowers collected into a Head.

27. ABSINTHIUM *orientale incanum tenuifolium, floribus luteis in capitulum congeſtis, & ſurſum ſpectantibus,* Hoary narrow leaved Eaſtern Wormwood, with yellow Flowers collected into a Head, and looking upward.

28. ABSINTHIUM *orientale incanum, tanaceti folio, inodorum. Tourn. Cor.* Hoary Eaſtern Wormwood, with a Tanſy Leaf, without Smell.

29. ABSINTHIUM *orientale tenuifolium argenteum & ſericum, flore magno. Tourn. Cor.* Eaſtern Wormwood, with narrow ſilver coloured ſilken Leaves.

30. ABSINTHIUM *orientale vulgari ſimile, ſed longè minus amarum. Tourn. Cor.* Eaſtern Wormwood, like the common, but far leſs bitter.

31. ABSINTHIUM *orientale tenuifolium incanum, odore lavendulæ, & inſipidum. Tourn. Cor.* Hoary narrow leaved Eaſtern Wormwood, with a Lavender Smell, and inſipid.

32. ABSINTHIUM *orientale tenuifolium incanum, lavendulæ odore, & amarum, flore deorſum ſpectante. Tourn. Cor.* Hoary narrow leaved Eaſtern Wormwood, with a Lavender Smell, and bitter, with the Flower hanging down.

33. ABSINTHIUM *tanaceti folio odoratiſſimum. Am.* Wormwood with a Tanſy Leaf, very ſweet ſcented.

This is an annual Plant which was found in *Siberia*, and the Seeds were ſent from thence to the Imperial Garden at *Peterſburgh*, where the Plants produced good Seeds, ſome of which were ſent me by the late Dr. *Amman* the Profeſſor, which have ſucceeded in the *Chelſea* Garden. It is a biennial Plant, which riſes much better from the ſelf ſown Seeds, than when ſown by Hand. The Plants which come up in Autumn, will flower the Summer following in *July*, and the Seeds ripen in *Auguſt*. It grows to near three Feet high, and the whole Plant hath a very ſtrong Odour.

The 1ſt of theſe Sorts is very common in *England*, in the Roads, and upon Dunghills; it is alſo planted in Gardens for common Uſe. It may be propagated by Slips, in *March* or *October*; or may be raiſed from Seeds, which ſhould be ſown ſoon after they are ripe.

The 2d Sort is the true *Roman* Wormwood, which is recommended in many Diſpenſatories to be uſed in Medicine, but the common Sea Wormwood is now generally ſubſtituted in its room. It hath Leaves which are finely cut into many narrow Segments, and very white on their under Side: The Flowers are produced on ſlender Spikes, which come out from the Wings of the Leaves. Theſe are ſmall, and hang downward, each being compoſed of many hermaphrodite Flowers, included in one common Empalement, and of a pale yellow Colour. Theſe appear about the End of *Auguſt*, or the Beginning of *September*, but the Seeds rarely ripen in *England*. The Plants however creep greatly by their Roots, ſo that when planted in a Garden, they multiply too faſt, unleſs their Roots are every Year retrenched.

The 3d and 11th Sorts are very like each other, and differ only in this, *viz.* the upper Leaves of the 11th are divided into many Parts, whereas all thoſe of the 3d are entire; whether theſe be only accidental Differences ariſing from the ſame Seeds, I cannot pretend to determine, having never raiſed either of theſe Species from Seeds; but thus far I can ſay, that the Plants which are propagated from either, always remain the ſame as their Parent Plants.

The Tree Wormwood riſes to be a Shrub five or ſix Feet high, and is kept in Gardens as a Rarity. It was formerly preſerved in Green-houſes; but hath been found hardy enough to endure our common Winters abroad, if planted in Places ſheltered from the Northern Winds. This ſhrub makes an agreeable Variety in ſmall Quarters of Ever-greens, or flowering ſhrubs. The hoary Leaves, which continue all the Year freſh, ſtrike the eye at a great Diſtance, and have a good Effect in diverſifying the Plantations. This ſhrub is eaſily raiſed from Cuttings planted in any of the Summer Months (under a Hedge or Wall), where they may have only the Morning Sun; and being frequently watered, will take Root in a Month or ſix Weeks time, when they may be removed to any Places where they are deſigned to remain; obſerving, however, in this (as well as in many other Shrubs and Plants which are Natives of a warmer Climate), to place them always in a dry Situation: Wet, eſpecially in Winter, being abſolute Deſtruction to all theſe Sorts of Plants; of which one or two ſhould be conſtantly ſheltered in Winter, leſt thoſe in the open Air ſhould be deſtroyed.

The 25th Sort, being a Shrub, muſt be propagated by Cuttings, after the manner directed for the 5th Sort. Theſe muſt be kept in Pots, that they may be removed into the Green-houſe in Winter, becauſe in very ſevere Froſt they are often deſtroyed; though in mild Winters they will live in the open Air, provided they are planted on a dry Soil, and in a warm Situation.

The 6th, 7th, 8th, 9th, 10th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, and 20th Sorts, are all low Plants, which multiply very faſt by their creeping Roots; ſo that if once planted in a Garden, they will thrive faſt enough. Many of theſe grow near the Sea, and ſome of them very plentifully on the *Britiſh* Coaſt, and others on the Sea Shore in *France* and *Spain*; but they are all of them hardy, ſo will live in the open Air in *England*; but as they are Plants of little Beauty, are ſeldom admitted into Gardens, except where they are allowed a Place for the Sake of Variety.

They are eaſily propagated by parting their Roots, which may be done either in Spring or Autumn; and if they have an open Expoſure, they will thrive in any Soil, unleſs under the Shade of Trees, where they never do well.

The 22d and 23d Sorts are Natives of the *Cape of Good Hope*. Theſe may alſo be propagated by planting either Cuttings or Slips in any of the Summer Months, obſerving to water and ſhade them until they have taken Root. Then they may be placed abroad among other Exotic Plants, where they may remain till *October*, when they muſt be removed into the Green-houſe, and placed with Myrtles, and other hardy Plants, which require a large Share of free Air in mild Weather, and only want Protection from ſevere Froſts. They require to be frequently watered in mild Weather, and ſhould have a light freſh Soil. The 22d Sort will riſe to the Height of ſeven or eight Feet; but the 23d is an humble Plant. Theſe ſeldom produce Seeds in *Europe*.

There is a great Variety of the Sea Wormwoods, growing plentifully on the ſalt Marſhes, in divers Parts of *England*, which are indifferently gathered, and brought to the Markets, and ſold for the *Roman* Wormwood; from which they differ greatly in the Colour of their Leaves, as alſo in their Taſte and Smell. By many Perſons, however, the Sea Wormwoods are preferred to the true *Roman* Wormwood, as having a ſtronger and more grateful Scent; though the *Roman* Wormwood is thought to be leſs nauſeous to the Stomach.

ABRUS. *See* Glycine.

ABUTILON [the Name is *Arabic*], yellow Mallow.

The *Characters* of this Genus are,

It has a ſingle angular Empalement which is permanent, and divided into five Parts at the Top. The Flower conſiſts of five Petals, joined at their Baſe. In the Center ariſe many Stamina, coaleſcing at the Bottom to the Style, and forming a Sort of Column, which reſts upon a round Germen. After the Flower is paſt, the Germen turns to a round or angular Seed Veſſel, having ſeveral Cells opening lengthwiſe, and filled with Seeds, which in ſome Species are ſhaped like a Kidney, and in others round.

The *Species* are,

1. ABUTILON. *Dod.* The common Yellow Mallow.

2. ABUTILON *Indicum. J. B.* Indian Yellow Mallow.

3. ABUTILON *Carolinianum reptans, alceæ foliis, gilvo flore. Act. Phil.* The *Carolina* Abutilon, with Leaves like the Vervain Mallow.

4. ABUTILON *Americanum, ampliſſimo folio, caule villoſo. Plum.* The large leaved *American* Abutilon, with woolly Stalks.

5. ABUTILON *Americanum, fructu ſubrotundo pendulo, è capſulis veſicariis criſpis conflato. Rand.* The *American* Abutilon, with roundiſh pendulous Fruit, whoſe Seed Veſſel is like a ſwelled Bladder.

6. ABUTILON *althæoides, flore carneo, fructu globoſo. H. E.* Shrubby Abutilon, with the Appearance of Marſh-mallow, a Fleſh-coloured Flower, and round Fruit.

7. ABUTILON *periplocæ acutioris folio, fructu ſtellato. Horth. Elth. p.* 4. Abutilon, with a pointed Periploca Leaf, and a ſtarry Fruit.

8. ABUTILON *Americanum, folio haſtato, flore amplo purpureo-cœruleo, longo petiolo inſidente. Houſt. American* Abutilon, with a ſpear-ſhaped Leaf, and a large blue Flower, with a long Foot-ſtalk.

9. ABUTILON *Americanum, flore albido, fructu è capſulis veſicariis planis conflato, pediculo geniculato. Martyn. American* Abutilon, with a white Flower, and a plain bladder Fruit, with a jointed Foot-ſtalk.

10. ABUTILON *Americanum, ribeſii foliis, flore carneo, fructu pentagono aſpero. Houſt. American* Abutilon, with Currant Leaves, a fleſh-coloured Flower, and a rough five cornered Fruit.

11. ABUTILON *Americanum fruteſcens, folio amplo cordato ſubtus lanuginoſus, floribus amplis luteis. Houſt.* Shrubby *American* Abutilon, with a large heart-ſhaped woolly Leaf, and large yellow Flowers.

12. ABUTILON *fruticoſum aquaticum, folio cordato ſcabro, flore pallide luteo.* Shrubby Aquatic *Abutilon*, with a rough heart-ſhaped Leaf, and a pale yellow Flower.

13. ABUTILON *Americanum fruticoſum, foliis cordatis, floribus parvis purpuraſcentibus. Houſt.* Shrubby *American Abutilon*, with heart-ſhaped Leaves, and ſmall purpliſh Flowers.

14. ABUTILON *lavateræ flore, fructu criſtato. H. E. Abutilon*, with a Flower like *Lavatera*, and a creſted Fruit.

15. ABUTILON *arboreum, folio althææ, fructu villoſo, flore maximo ex rubro flaveſcente. Houſt.* Tree *Abutilon*, with a Marſh-mallow Leaf, a hairy Fruit, and a very large yellowiſh red Flower.

16. ABUTILON *fruteſcens lanuginoſum, foliis ſubrotundis, flore amplo luteo patulo. Houſt.* MSS. Shrubby woolly *Abutilon*, with roundiſh Leaves, and a large yellow ſpreading Flower.

The firſt Sort here mentioned is an annual Plant, which is hardy enough to come up in the common Ground, and will perfect its Seeds without any Trouble; but will not bear tranſplanting, unleſs when the Plants are very young; ſo that the Seeds ſhould be ſown where the Plants are deſigned to remain; and if the Seeds are permitted to fall, they will come up the following Spring without any Care. This is very common in *Virginia*, and moſt of the other Parts of *America*; where it is called by ſome of the Inhabitants Marſh-mallow, becauſe the Leaves are ſoft and woolly, and is uſed by them inſtead of Marſh-mallow, which is not a Native of thoſe Countries. There is no great Beauty in this Sort.

The 3d Sort grows naturally in *Carolina*, from whence the Seeds were brought by Mr. *Cateſby*. This is a trailing Plant, whoſe Branches lie on the Ground, and put out Roots at every Joint; the Flowers come out from the Wings of the Leaves, which are of a red Copper Colour, and ſmall, ſo make no great Figure.

Theſe appear in *July* and *Auguſt*, and the Seeds ripen in a Month or five Weeks after. If the Seeds be permitted to ſcatter, the Plants will come up the following Spring, and require no other Care but to thin them to a proper Diſtance, and keep them clear from Weeds. The Seeds may alſo be ſown in the Spring, on a Border of light Earth where they are to remain. This is an annual Plant, which periſhes in Autumn.

The 2d, 5th, 7th, 8th, 9th, 10th, and 14th Sorts, are all of them annual Plants, which require to be ſown on a moderate hot Bed; and when they have obtained Strength, may be tranſplanted out into the common Ground, where they will perfect their Seeds in Autumn. But as they are Plants of little Beauty, they are ſeldom cultivated in Gardens.

The 4th, 11th, 12th, and 13th Sorts, are ſhruby Plants, which are propagated by Seeds. Theſe muſt be ſown upon a moderate hot Bed; and the Plants muſt be potted, and preſerved in a moderate Stove, otherwiſe they will not endure the Cold of the Winter in *England*.

The 4th Sort will live two Years, and grow to the Height of nine or ten Feet. The Leaves are large and woolly, as are the Stalks, but the Flowers have little Beauty, being ſmall, and of a yellow Colour, ſo that the greateſt Beauty of it conſiſts in the Size of the Leaves, which are much larger than thoſe of any other Species of this Genus; I have meaſured ſome of them which were more than ten Inches long, and eight broad in their wideſt Part.

The 11th, 12th, and 13th Sorts, are Shrubs growing to the ſame Height as the former. The 11th has pretty large yellow Flowers, which make a tolerable good Appearance when open, but each Flower is of ſhort Duration. There is, however, a Succeſſion of them for more than two Months; this Plant may better deſerve a place in Gardens, than moſt of the other Species.

The 12th and 13th Sorts are Plants of little Beauty, their Flowers being ſmall, and there is nothing remarkable in their Leaves to recommend them, ſo that they are only preſerved in the *European* Gardens for the ſake of Variety. The uſual Time of their flowering is in *July*, *Auguſt*, and *September*, but they will ſeldom flower in the open Air in *England*; therefore they ſhould be continually kept in the Stove, to have them in any Degree of Perfection, and with proper Care they will ripen their Seeds in Autumn.

Theſe Sorts grow naturally in *Jamaica*, at *La Vera Cruz*, and the *Havannah*, from whence their Seeds have been brought to *Europe*.

The 6th Sort grows to be a Shrub of eight or nine Feet high, and may be preſerved through the Winter in a Green-houſe, and expoſed in Summer to the open Air, where it will flower, and produce ripe Seeds in Plenty.

The 15th Sort is a Native of the *Weſt-Indies*, the Seeds of which were ſent from the north Side of *Jamaica*. This grows to the Height of ten or twelve Feet, and makes a handſome Plant. The Flowers are very large, and, at firſt Appearance, of a pale red Colour; but, as they expand, change to a yellow. They are of ſhort Duration; but there is a Succeſſion of them upon the Plants, for two Months, when properly treated.

It is propagated by Seeds, which are to be ſown upon a hot Bed in the Spring, and afterwards managed as hath been directed for the other tender Sorts before-mentioned; and muſt be preſerved in a warm Stove, otherwiſe it will not live through the Winter in *England*. In Summer it ought to have a large Share of free Air in warm Weather, and be frequently watered. It flowers in *July* and *Auguſt*, and with Care will ripen Seeds in *England*.

The 16th Sort was diſcovered by the late Dr. *Houſtoun*, at *La Vera Cruz*, in *America*, from whence he ſent the Seeds to *Europe*, which flouriſhed in ſeveral Gardens. This is the moſt beautiful Species of this Genus yet known. It grows to the Height of ſix or ſeven Feet, having a ſmooth woody Stem, which puts out many lateral Branches toward the Top. They are garniſhed with ſmooth heart-ſhaped Leaves. The Flowers come out at the Wings of the Leaves, ſtanding upon long Foot Stalks ſingly. They are compoſed of five large yellow Petals, which open like thoſe of the common Mallow, having in the Center a Column, compoſed of the Style and Stamina, coaleſcing, as in all the Plants of the ſame Claſs. After the Flower is paſt, the Germen becomes a five cornered Seed Veſſel, having five Cells, which contain ſmooth oblong Seeds.

The Plants of this Sort will continue three or four Years, and produce good Seeds, but they require a warm Stove to preſerve them through the Winter in *England*. This muſt be treated in the ſame Manner as the tender Sorts before-mentioned. This Species is repreſented in the firſt Number of my Figures of Plants.

ACACIA, *Egyptian* Thorn, or Binding Bean-Tree.

The *Characters* of this Genus are,

The Flower is tubulous, and conſiſts of one Leaf, divided ſlightly at the Top into five Parts; in the Center is fixed the oblong Germen, ſupporting a ſlender Style, which is attended by many fine hairy Stamina, which are longer than the Style, and have each an incumbent Summit. The Flowers are collected, many of them, into one Head, which is either ſpherical or oblong. After the Flowers are paſt, the Germen turns to a Pod, which is long, and divided into ſeveral Cells by tranſverſe Diaphragms, each having one oblong compreſſed Seed.

The *Species* are,

1. Acacia *vera. J. B.* The true *Egyptian Acacia*.

Dr. *Linnæus* titles this *Mimoſa ſpinis geminis approximatis foliis bipinnatis partialibus bijugatis. Hort. Cliff.* 208.

2. Acacia *Indica, foliis ſcorpioïdis leguminoſæ, ſiliquis fuſcis teretibus reſinoſis. H. L.* The *Indian Acacia*, with taper reſinous Pods.

This is titled by Dr. *Linnæus*, *Mimoſa ſpinis geminis diſtinctis folliis bipinnatis partialibus octojugatis.*

3. Acacia *ſimilis Mexiocana, ſpinis cornu ſimilibus. Breyn.* The great horned *Acacia. Vulg.*

This is titled by Dr. *Linneus*, *Mimoſa ſpinis axillaribus geminis connatis foliis bipinnatis. Hort. Cliff.* 208.

4. Acacia *quodammodo accedens, ſive Ceratia & Acacia media Jamaicenſis ſpinoſa, bigeminatis foliis, floſculis ſtamineis, atronitente fructu, ſiliquis intortis. Pluk. Phyt. Acacia* with branching Leaves, and twiſted Pods.

5. Acacia *arborea major ſpinoſa, pinnis quatuor majoribus ſubrotundis, ſiliquis variè intortis. Sloan. Cat. Plant. Jam.* Large four leaved *Acacia*, with twiſted Pods.

6. Acacia *Americana fruteſcens non aculeata, flore purpuraſcente. Plum. Cat.* Shruby *American Acacia* without Thorns, and a purpliſh Flower.

7. Acacia *non ſpinoſa, flore albo, ſtaminibus longis; foliorum pinnis latiuſculis, glabris & auritis. Houſt.* Acacia without Thorns, having white Flowers with long Filaments and broad ſmooth leaves.

8. Acacia *humilis, non ſpinoſa, foliis ſubtus incanis florum ſtaminibus longis rubentibus. Houſt.* Dwarf *Acacia* without Thorns, having red Flowers with long Filaments.

9. Acacia *Americana, non ſpinoſa, flore purpureo, ſtaminibus longiſſimis, ſiliquis planis villoſis, pinnis foliorum tenuiſſimis. Houſt. American Acacia* without Thorns, having purple Flowers, with very long Filaments, flat hairy Pods, and very narrow Leaves.

10. Acacia *ſpinoſa, foliorum pinnis tenuiſſimis glabris, floribus globoſis luteis, ſpinis longiſſimis. Houſt.* Prickly *Acacia*, with very narrow ſmooth Leaves, round yellow Flowers, and very long Thorns.

11. Acacia *non ſpinoſa, flore albo, foliorum pinnis latiuſculis glabris, ſiliquis longis planis. Houſt.* White flowering *Acacia* without Thorns, having broad ſmooth Leaves, and long flat Pods.

12. Acacia *non ſpinoſa, tenuifolia, villoſa, floribus globoſis albis, ſiliquis brevibus hirſutis. Houſt.* Narrow leaved hairy *Acacia* without Thorns, having round white Flowers, and ſhort hairy Pods.

13. Acacia *non ſpinoſa, latiore folio villoſo floribus globoſis albis, ſiliquis brevibus hirſutis. Houſt.* Broad leaved hairy *Acacia*, having round white Flowers and ſhort hairy Pods.

14. Acacia *non ſpinoſa, floribus globoſis albis foliorum pinnis tenuiſſimis glabris; ſiliquis ad ſingula grana tumidis. Houſt. Acacia* without Thorns, having round white Flowers, with very narrow ſmooth Leaves, and jointed Pods.

15. Acacia *ſpinoſa tenuifolia, ſpinis ſingulis cornu bovinum per longitudinem fiſſum referentibus. Houſt. Cat. Acacia* with ſingle Thorns ſhaped like thoſe of an Ox's Horn, and ſeem as if ſplit through their Length.

16. Acacia *ſpinoſa tenuifolia, ſiliquis latis, ſpinis minimis recurvis ſolitariis. Houſt. Cat.* Prickly narrow leaved *Acacia*, with broad Pods, and ſmall recurved Spines, which come out ſingle.

17. Acacia *ſpinoſa tenuifolia, floribus ſpicatis luteis, ſiliquis longiſſimis compreſſis flavis. Houſt. Cat.* Prickly narrow leaved *Acacia*, with yellow ſpiked Flowers, and broad compreſſed Pods which are yellow.

This Dr. *Linnæus* has titled *Mimoſa aculeata foliis bipinnatis numeroſiſſimis lineari aceroſis panicula aculeata capitulis globoſis. Flor. Zeyl.* 216.

18. Acacia *Americana cornigera, ſpinis craſſioribus & nigricantibus.* Horned *American Acacia*, with very thick black Spines.

19. Acacia *non ſpinoſa tenuifolia villoſa, ſiliquis latis intortis.* Smooth narrow leaved hoary *Acacia*, with broad twiſted Pods.

20. Acacia *Americana tetraphylla & ſpinoſa, floribus globoſis, ſtaminibus florum longis rubentibus.* Prickly four leaved *Acacia*, with globous Flowers, having long red Stamina.

21. Acacia *Americana, faginis foliis, tetraphylla, floſculis ſtaminoſis in ſpicam depoſitis. Pluk. Amalth.* 4. Four leaved *American Acacia*, with ſtaminous Flowers diſpoſed in Spikes.

22. Acacia *Buxifoliis rotundioribus floribus albis ſiliquâ latâ compreſſâ. Cateſb. Carol. i. e. Acacia* with round Box Leaves, white Flowers, and broad flat Pods.

The 1ſt Sort is the Tree from whence the true *Succus Acaciæ* is taken, and the Gum *Arabic* exudes from the Branches of the ſame; which, though mentioned as a Native of *Egypt*, yet is found in divers Parts of *America*, from whence the Seeds of this Tree have been ſent into *England*, and raiſed in ſeveral Gardens near *London*.

This Tree arrives to a large Size in the Countries where it grows, but in *England* it is rarely ſeen more than eight or ten Feet high. It frequently flowers in Autumn, but never produces any Seeds.

The 2d Sort is the moſt common Kind in *Jamaica* and *Barbadoes*, and the other warm Parts of *America*; and, for the Sweetneſs of its Flowers, has been diſperſed through moſt Parts of *Europe*; and though a Native of the warmer Parts of the *Indies*, it hath been made familiar to the *Italian* Gardens, and is cultivated likewiſe in great Plenty in *Portugal* and *Spain*.

The *Italian* Gardeners, who bring over Orange Trees, *&c.* every Year, generally bring alſo many young Plants of this Sort to *England*, under the Title of *Gazia*; but as they are too tender to live in a common Greenhouſe in *England*, ſo few of thoſe which are purchaſed of them ſucceed.

I have had ſome Plants of this Sort upwards of ſixteen Feet high, which have produced great Numbers of Flowers in *July* and *Auguſt*, but theſe were kept in a Stove under Glaſſes, for they will not flower in the open Air in this Country. The Flowers are of a bright yellow Colour, and ſmell ſweet; in the *Weſt-Indies* it is called *Sponge Tree*.

The 3d Sort is at preſent very rare in *England*, and only to be found in ſome curious Gardens. This Tree produces its Spines by Pairs, which are extreme large and crooked, and of a whitiſh Colour; but I do not remember ever to have ſeen this Flower.

In *England*, from the dried Samples, however, which I have received from *Campeachy*, with many Flowers upon them; there appears but little Beauty in them, nor do the Trees in their native Soil make a better Appearance, their Branches always growing deformed, and being but thinly garniſhed with Leaves, when in their greateſt Vigour. For ſeveral Months, too, they are deſtitute of Leaves, ſo that the only Thing remarkable in this Tree is, the uncommon wreathed Spines with which the Trunk and Branches are fully beſet. Theſe have the Reſemblance of Animal Horns, and are variouſly twiſted and contorted.

The 18th Sort is of this Kind, but differs from it in having ſhort thick black Spines, which ſeldom exceed an Inch in Length; whereas the Thorns of the other Sort are often four or five, being variouſly twiſted, and very white. There are two Sorts of this, one with round, and the other with long Flowers, which alſo differ in their Leaves. The Pods of theſe Sorts abound with a ſweet Pulp, which draws the Inſects to feed upon it, whereby the Seeds are generally deſtroyed; ſo that it is very rare to find any entire Pods upon the Trees in the native Places of their Growth.

The 4th Sort was brought from the *Bahama Iſlands* by Mr. *Cateſby*, *Anno* 1726. The Seeds of this Plant (which are flat, and one Half of a beautiful red Colour, the other Half a deep black) grow in long twiſted Pods, opening when the Seeds are ripe, on one

Side, and letting them out; which hanging by a ſmall Thread for ſome Time out of the Pods, make a very agreeable Appearance. The Leaves of this Tree branch out and divide into many Ramifications: The Lobes are roundiſh, and placed in a very regular Order. The Flowers have not as yet appeared in *England*, but from a Painting done from the Plant in the Country, they ſeem to be very beautiful.

The 5th Sort was brought from *Jamaica*, and is growing in the *Phyſic Garden* at *Chelſea*; this hath four large Lobes to each Leaf; the Spines are ſhort, ſtiff, and crooked, and the Seeds grow in twiſted Pods like the former. This Plant is well deſcribed in Sir *Hans Sloane*'s *Natural Hiſtory of Jamaica*. By the Inhabitants of *America* it is called *Doctor Long*, under which Name the Seeds are frequently brought to *England*.

The 16 Sorts next mentioned, were collected by the late ingenious Dr. *William Houſtoun*, in *Jamaica*, at *Vera Cruz* and *Campeachy*, who ſent the Seeds of moſt of them into *Europe*, many of which are now growing in the *Phyſic Garden* at *Chelſea*, where ſome of them have produced Flowers, and the 13th Sort has produced Plenty of Seeds.

Theſe being all tender, are to be placed in Stoves in the Winter, and in Summer muſt be but a ſhort Time expoſed to the open Air, and have a warm Situation.

The Trees are propagated by ſowing their Seeds on a hot Bed in the Spring of the Year, which will in a ſhort time appear above Ground, and in about five or ſix Weeks after, be fit to tranſplant, when a freſh hot Bed is to be prepared for them, and ſhould be pretty warm; the next Thing to be provided is a Quantity of ſmall Halfpenny Pots, which are to be filled with freſh light ſandy Earth; theſe ſhould be plunged into the hot Bed, but not into Dung: for if theſe Beds are made with warm Horſe Dung, they ought to be covered with Earth as deep as the Pots, whoſe Bottoms ſhould reſt upon the Dung; for otherwiſe the Roots of the Plants may ſuffer by too much Heat; but Beds of Tanner's Bark ſeldom heat ſo violently. As ſoon as the Earth in the Pots is warm, which will be in two or three Days, you ſhould carefully take up the young Plants out of the firſt hot Bed, planting 4 or 5 Plants into each of theſe Pots, giving them a gentle Watering to ſettle the Earth to their Roots, and ſcreening them with Mats over the Glaſſes from the Heat of the Sun, until they have taken Root; after which you muſt give them Air, by raiſing the Glaſſes, in Proportion to the Heat of the Weather, or Conſtitution of the Plants.

The 2d, 3d, and 6th Sorts are tender, and ſhould be kept in the hot Beds till *July*, when they may be expoſed to the Air by Degrees, though the Glaſſes ſhould not be quite removed from them the firſt Year, but only drawn off in the Day, in good Weather, and covered every Night. Theſe muſt be ſet in a Stove the firſt and ſecond Winters, while young, as being then pretty tender; but when they are grown woody, will live in a good Green-houſe very well, and may be expoſed in Summer time, with Oranges, Myrtles, *&c.* If kept in a Green-houſe, they require but little Water in Winter, eſpecially ſuch as ſhed their Leaves, being at that Seaſon incapable of diſcharging a Redundancy of Moiſture; their Leaves, which were the greateſt Inſtruments in throwing off the ſuperfluous Humour by Perſpiration, being gone, and the whole Tree ſeeming to remain for a certain Time in a State of Reſt.

The 1ſt, 4th, and 5th Sorts are very tender (eſpecially while young) and therefore ſhould have a hot Bed of Tanners Bark; and as they increaſe in Bulk, ſhould be ſhifted into bigger Pots. The Earth for theſe ſhould be a little lighter, and more inclined to a Sand, than for the other Sorts; but never allow them Pots that are too large, which is full as bad to theſe as to Orange Trees; neither give them too much Water, eſpecially in Winter. The 1ſt Sort, being the hardieſt of the three, will, when grown to be woody, ſtand in a common Stove amongſt *Guavas*, *Viburnums*, &c. which ſhould be kept to the Point of temperate Heat in Winter; and in the Summer time, in warm Weather, may enjoy the open free Air: But the 4th and 5th Sorts muſt have a Bark Stove in Winter, nor ſhould they be expoſed to the open Air in Summer, at leaſt for four or five Years, until they are grown very woody; for they are very tender, and with great Difficulty preſerved in this Climate. The Stove in which theſe ſhould be placed in Winter, muſt be kept to about the temperate Point, as marked on the Botanical Thermometers. Theſe ſhould have very little Water in Winter, but in Summer Time will require frequent Refreſhings; though at that Seaſon it ſhould not be given them in great Quantities at one Time. The 4th Sort is a very beautiful Tree. The 5th ſheds its Leaves juſt before the new ones come on, ſo that it is naked of Leaves about a Month or ſix Weeks in the Spring of the Year, which has occaſioned ſome People to throw them away as dead, when, if they had let them remain, they would have come out freſh again. This I thought proper to mention, in order to caution People not to be too haſty in throwing out Trees for dead, but preſerve them through the ſucceeding Summer, to ſee if they will ſhoot again; for I have known ſeveral Plants, which, after having been given over by unſkilful Perſons for dead, have the *July* following ſhot out vigorouſly again; and others, which have died to the ſurface of the Earth, have riſen again from the Root.

The 3 Sorts of horned *Acacias* are very often deſtitute of Leaves for two or three Months, appearing to have no Life; but they will put out freſh Leaves towards Autumn, which is commonly the Seaſon when they are moſt vigorous. Theſe ſhould be expoſed in the Summer Seaſon for about two Months, to clear them from Inſects, which greatly infeſt them, in a Place defended from ſtrong Winds; and in Winter they require a moderate Degree of Warmth.

All the other Sorts here mentioned are propagated by Seeds, which, ſeldom ripening in this Country, muſt be procured from *America*, particularly at *Campeachy*, where there is great Variety of this Tree, many Sorts of which have been hitherto unknown to Botanical Writers. In bringing over the Seeds of theſe Trees, they ſhould be taken out of the Pods when gathered, and put up in Papers, and ought to have Tobacco, or ſome other Herb noxious to Inſects, put between the Papers; otherwiſe the Seeds will be eaten and deſtroyed before they arrive in *England*. For the Inſects depoſit their

Eggs in ſmall Punctures which they make in the Pods ; and as theſe are ſoon hatched, they immediately attack the Seeds for Food, and eat Holes through them, by which they are ſpoiled, this has often happened to Seeds which have been ſent me from *America*.

The 22d Sort is a Native of the *Bahama Iſlands*, it is figured by Mr. *Cateſby*, in his *Natural Hiſtory*, but the Leaves of the Plants are not well expreſſed. It grows to be a large Timber Tree in its native Country, where it is commonly called *Mahogony*. The Trunks of theſe Trees are very ſtrait, and frequently more than thee Feet Diameter.

There are many Plants of this Sort now in the Gardens, which have been raiſed from the Seeds, and were lately ſent from the *Bahama Iſlands* ; theſe grow very ſtrait, and are well garniſhed with Leaves, which are of the winged Kind, but very ramoſe, ſo make a handſome Appearance in the Stove ; they are tender while young, and therefore to be treated in the ſame Way, as directed for the other tender Sorts before mentioned.

There are ſeveral of theſe *Acacias*, which are very tender while they are young ; but, after two or three Years Growth, become hardy enough to bear the open Air in Summer ; though ſcarce any of them will live through the Winter, in a Green-houſe, unleſs they have ſome Warmth in very cold Weather, the firſt Sort I have kept for ſome moderate Winters in a Green-houſe, but thoſe Plants were become ſtrong and woody ; and in a Winter, which proved more ſevere, were all deſtroyed : So that they ſhould be placed in a moderate Stove in Winter, with ſome of the leſs tender Exotics, where they will thrive better than in a greater Degree of Heat.

ACACIA Germanorum. *See* Prunus Sylveſtris.

ACACIA Virginiana. *See* Robinia.

ACACIA, the Three Thorned. *See* Gleditſia.

ACALYPHA, three ſeeded Mercury.

The *Characters* are,

It hath male and female Flowers in the ſame Plant, the male Flowers grow in Cluſters above the female, and neither of them have any Petals ; the male Flowers have an Empalement, compoſed of three roundiſh concave Leaves, in which are ſituated eight or ten Stamina joined together at their Baſe ; theſe are ſhort, and crowned with roundiſh Summits. The female Flowers have a three leaved Empalement, in the Center of which is ſituated a round Germen, ſupporting three branching Styles. When the Flowers decay, the Germen turns to a roundiſh Veſſel divided into three Cells by deep Furrows, in each of the Cells is contained one large round Seed.

The *Species* are,

1. ACALYPHA *involucris femineis cordatis inciſis, foliis ovato-lanceolatis petiolo longioribus. Hort. Upſal.* 290. *i. e.* Three ſeeded Mercury, whoſe female Flowers have a cut heart ſhaped Empalement, and oval ſpear ſhaped Leaves, with long Foot Stalks. *Mercurialis tricoccos*, &c.

2. ACALYPHA *involucris femineis cordatis ſubercnatis, foliis ovatis petiolo brevioribus. Flor. Zeyl.* 341. *i. e.* Three ſeeded Mercury, whoſe female Flowers have an indented heart ſhaped Empalement and oval Leaves, with a ſhort Foot Stalk. *Urtica tricoccos*, &c.

3. ACALYPHA *involucris femineis integerrimis foliis lanceolatis obtuſis. Lin. Sp. Plant.* 1004. *i. e.* Three ſeeded Mercury, whoſe female Flowers have whole Empalements, and blunt ſpear ſhaped Leaves.

The 1ſt Sort grows naturally in *Virginia*, and ſeveral other Parts of *North America*, from whence I have received the Seeds. This is an annual Plant, which ſeldom grows more than a Foot high, ſending out ſeveral ſide Shoots towards the Bottom. The Leaves are very like thoſe of the broad leaved *Pellitory* of the Wall, and are placed alternately, having long Foot Stalks, from the Alæ, or Wing of the Leaf ; the Flowers are produced in ſmall Cluſters, the Male always being above the Female. Theſe make but a poor Appearance, and reſemble thoſe of the *Pellitory* ſo much, that at a ſmall Diſtance, any Perſon might ſuppoſe them to be the ſame, till convinced by a nearer Inſpection.

If the Seeds of this Sort are permitted to ſcatter, the Plants will come up in the Spring, better than if ſown by Hand ; for if they are not put in the Ground in Autumn, the Seeds rarely grow the firſt Year. All the Culture this Plant requires, is to keep it clear from Weeds, and let it remain where it was ſown, for it doth not bear removing well. It flowers in *Auguſt*, and the Seeds ripen in *October*.

The 2d Sort is a Native of the warmeſt Countries. I received the Seeds of this from *Jamaica*, where it grows in great Plenty. This is alſo an annual Plant, which in *England* ſeldom exceeds the former Sort in its Stature. The Leaves of this Sort greatly reſemble thoſe of the annual Nettle, and ſting full as much when touched. This is too tender to thrive in the open Air in *England* ; therefore the Seeds ſhould be ſown in Pots, which are to be plunged into a hot Bed, and if the Plants do not come up the firſt Year (which often happens) the Pots ſhould be put in ſhelter in Winter, and the following Spring plunged again into a hot Bed, which will bring up the Plants ; theſe muſt be tranſplanted into Pots, and brought forward in hot Beds, otherwiſe they will not produce Seeds in *England*.

The 3d Sort was found in great Plenty by Dr. *William Houſtoun*, at *La Vera Cruz*, in *America*. This is an Inhabitant of low marſhy Places, and grows about three Feet high, with an herbaceous Stalk ; the Leaves are placed alternately on the Stalks, theſe differ ſo much in their Figure, as to deceive the moſt ſkilful Botaniſt, for ſome Plants will have very narrow long Leaves, others as broad as thoſe of the Cheſtnut Tree, and deeply veined, which Varieties will ariſe from the Seeds of the ſame Plant, as I have frequently obſerved.

This is an annual Plant, and muſt be raiſed in a hot Bed ; when the Plants are fit to remove, they ſhould be tranſplanted each into a ſmall Pot, and plunged into a freſh hot Bed to bring them forward ; they afterwards muſt be removed into a Stove, where they will flower and perfect their Seeds in *September*, and the Plants will decay ſoon after.

Theſe Plants have no Beauty to recommend them, but as they are preſerved in ſeveral Gardens, for the ſake of Variety, ſo I thought it neceſſary to inſert them here.

ACANTHUS, *Branca Urſina*, or Bear's-breech.

The *Characters* of this Plant are,

The Flower hath a double Empalement, the outer one is compoſed of three Leaves, the under being broad, concave, and deeply ſawed on the Edge ; the two lateral are ſpear *ſhaped, and very ſlightly ſawed towards the Top. The inner Empalement conſiſts of two Leaves, the upper one being concave, and bent over like an Arch, this is ſawed at the Top; the under is reflexed downward, ſo is convex on the upper Surface. The Flower is of one Leaf, unequal, the Beard, or lower Lip, being large, plain, and erect, this is ſlightly indented at the Extremity; the Stamina and Style occupy the Place of the upper Lip. Theſe are ſtretched out beyond the Empalement, and are alſo arched. There are two long, and two ſhorter Stamina, which cloſely coaleſce to the Style; this is ſituated upon a roundiſh Germen, which afterwards becomes an oval Capſule, having two Cells, each containing one fleſhy ſmooth oblong Seed.*

The *Species* are,

1. ACANTHUS *foliis ſinuatis inermibus ſubtus villoſis*; the common, or ſmooth Garden Bears's-breech.

2. ACANTHUS *foliis ſinuatis inermibus glabris lucidè virens*; *Portugal* Bear's-breech, with ſmooth ſinuated Leaves of a ſhining green Colour.

3. ACANTHUS *foliis laciniatis pinnatifidis ſpinis mollioribus*; middle Bear's-breech, with deep laciniated Leaves, having ſoft Spines.

4. ACANTHUS, *foliis pinnatifidis ſpinoſis. H. C.* prickly Bear's-breech. *Acanthus Aculeatus.*

5. ACANTHUS *foliis pinnatifidis rigidis ſpinoſiſſimis*; eaſtern Bear's-breech, with ſtiff pinnated Leaves, ſtrongly armed with Spines. *Acanthus Orientalis.*

6. ACANTHUS *caule fruticoſo aculeato. Lin. Sp. Plant.* prickly Bear's-breech, with a ſhrubby Stalk. This is the *Acanthus Malabaricus Agrifolii folio. Pet. Hort. Sicc.* 10.

The 1ſt Sort is what is uſed in Medicine, and is ſuppoſed to be the *Mollis Acanthus* of *Virgil.* The Leaves of this Plant are cut upon the Capitals of *Corinthian* Pillars.

The 2d Sort was diſcovered in *Portugal,* by Dr. *Bernard de Juſſieu,* Demonſtrator of Plants in the Royal Garden at *Paris,* from whom I received the Seeds in 1725, which ſucceeded in the *Chelſea* Garden, and frequently perfects Seeds there; which being ſown, conſtantly produce the ſame Plants as the Parent, and therefore muſt be a diſtinct Species.

The 3d Sort hath been long an Inhabitant in the Garden at *Chelſea,* where it conſtantly flowers, and produces good Seeds, and theſe being ſown, do not produce any Variety; the Plants being always the ſame, the Leaves of this Sort are deeply laciniated, each Segment ending in a ſoft Spine.

The Leaves of the 4th Sort are alſo deeply jagged, in very regular Order, and each Segment it terminated with a ſharp Spine, as are alſo the Foot Stalks of the Leaves, and the Empalement of the Flower, which renders it troubleſome to handle either of them. I have frequently raiſed Plants of this Sort from Seeds, which have never varied from the Parent Plant.

The 5th Sort of Bears'-breech was diſcovered by Dr. *Tournefort* in the *Levant,* who ſent the Seeds of it to the Royal Garden at *Paris.*

The Leaves of this Sort always grow near the Ground, and are much ſhorter and ſtiffer than thoſe of any of the other Sorts, having whitiſh Veins, a little reſembling the Ladies Thiſtle. They are alſo much neater laciniated, but are armed with ſtronger Spines, which are whiter than thoſe of the other Species; this and the 4th Sort ſends up much taller flower Stems than either of the other. I have frequently had them upwards of four Feet high, and garniſhed with Flowers above three Feet; but the Flowers open ſucceſſively, beginning towards the Bottom, ſo that there are not many of them open at the ſame Time on the Stalks.

The 6th Sort grows naturally in *India,* I have alſo received it from the *Spaniſh Weſt-Indies.* This is a Shrub, which riſing about four Feet high, is divided into many Branches, which are garniſhed with Leaves, very like thoſe of the common, both in Size and Shape, and are armed with Spines in the ſame Manner towards the Extremity of the Branches; the Flowers come out ſingly, which are of a white colour, and ſhaped like thoſe of the common *Acanthus,* but ſmaller. After the Flower is paſt, the Germen becomes an oval bicapſular Veſſel, having one oblong Seed in each Cell. This Shrub is ever-green, but is too tender to thrive out of a Stove in *England,* and can only be propagated by Seeds, which do not ripen in *Europe.*

The other five Sorts are laſting Plants, which may be propagated either by Seeds, or parting their Roots; if, by the former method, the Seeds ſhould be ſown in a light dry Soil, towards the End of *March*; if the Seaſon proves favourable, the Plants will appear in *May,* and all the Culture they require, is to keep them clean from Weeds, and where the Plants are too cloſe, to thin them, ſo as to leave them about ſix Inches aſunder, which will be room enough for them to grow till *Michaelmas,* when they ſhould be tranſplanted where they are deſigned to remain. The 1ſt and 2d Sorts, being tenderer than the others, ought to be planted in a warm Border near a Wall; and as theſe do not multiply ſo faſt by their Roots, ſo they do not require more room than three Feet; but the other Sorts ſpread their Roots to a great Diſtance, and therefore muſt have more than twice that Room. Theſe being hardy may be planted between Shrubs, to fill up vacant Spaces, where they will thrive faſt enough, provided the Ground be light, and not over wet, and when they are in Flower, will make an agreeable Variety. When theſe latter Sorts are propagated by their Roots, it may be performed either in Spring, or Autumn; but the two firſt muſt only be removed in the Spring, for if they are tranſplanted in the Autumn, and the following Winter prove cold, they will be in Danger of being deſtroyed.

Theſe Plants take Root very deep in the Ground, ſo that when they are planted in wet Ground, their Roots will rot in Winter: I have frequently traced them more than four Feet, therefore they ſhould not be removed after they have been growing long in a Place, but the ſide Shoots may be annually taken off, eſpecially from the three creeping Kinds, otherwiſe they will ſpread ſo far, as to overbear any of their neighbouring Plants or Shrubs. When the Sorts, with creeping Roots, are once eſtabliſhed in a Garden, they are with Difficulty eradicated, for every Root which may happen to be left, will ſhoot again, ſo as to become troubleſome.

The 1ſt, 3d, and 4th Sorts grow naturally in the Woods about *Naples* and in *Sicily,* as alſo in ſeveral Iſlands in the *Archipelago,* the 2d in *Portugal* and *Spain,* and the 5th in the *Levant.* They all flower in *July* and *Auguſt,* and their Seeds ripen in *October.*

ACARNA. *See* Cnicus.

ACER. The Maple Tree.

The *Characters* of this Tree are,

It hath male and hermaphrodite Flowers, growing in the ſame Bunch, the Empalement of the Flower is of one Leaf, which is cut into five acute Segments almoſt to the Bottom; the Flowers have five Leaves, which are oval, and ſpread open over the Empalement. In the Center are placed eight ſhort Stamina, which are crowned with Summits placed croſs Ways. The hermaphrodite Flowers have a compreſſed Germen, ſituated at the bottom of the Empalement, and a double Stigma, which afterwards become two winged Seed-veſſels joined at their Baſe, each incloſing one round Seed.

The *Species* are,

1. ACER *foliis quinquelobis inæqualiter ſerratis floribus racemoſis. Lin. Sp. P.* The greater Maple, falſely called *Platanus.* The Sycamore Tree, *vulgò.*

2. ACER *foliis lobatis obtuſis emarginatis. Lin. Sp. Plant.* 1055. The ſmall or common Maple. By the *French, Petit erables des bois.*

3. ACER *folliis compoſitis floribus racemoſis. Hort.* 144. The *Virginia* aſh-leaved Maple. This is the *Acer maximum foliis trifidis vel quinquefidis Virginianum. Pluk. Phyt.*

4. ACER *foliis quinquelobis acuminatis acutè dentatis glabris floribus corymboſis. Lin. Flor. Succ.* 303. The *Norway* Maple with plane-tree Leaves.

5. ACER. *foliis quinquelobis ſubdentatis ſubtus glaucis pedunculis ſimpliciſſimis aggregatis, Lin. Sp. Plant.* 1055. The Scarlet flowering Maple of *Virginia.*

6. ACER *foliis quinquepartito-palmatis acuminato dentatis. Lin. Sp. Plant.* 1055. The *American* Sugar Maple.

7. ACER *foliis trilobis acuminatis ſerrulatis floribus racemoſis. L. S. P.* Mountain Maple of *America.*

8. ACER *foliis lobatis, minimè inciſis fructu racemoſo.* The *Italian* Maple, commonly called *Opalus.*

9. ACER *foliis trilobis integerrimis. Prod. Leyd.* 459. The *Montpelier* Maple.

10. ACER *foliis trilobis integerrimis ſubvilloſis.* The Eaſtern Maple with Ivy Leaves.

11. ACER *foliis ovatis integerrimis ſempervirentibus.* Eaſtern Maple with oval entire ever-green Leaves.

12. ACER *foliis cordatis indiviſis ſerratis lobis obſoletis floribus racemoſis. Lin. Spec. Plant.* 1054. *Tartarian* Maple with heart-ſhaped ſawed Leaves, and Flowers growing in long Bunches.

Moſt of theſe Trees are eaſily propagated by ſowing their Seeds, ſoon after they are ripe, in an open Bed of common Earth, covering them about half an Inch thick with light Earth. The Spring following they will appear above Ground, and, if kept clear from Weeds, will grow above a Foot high in the firſt Summer. The *Michaelmas* following (if they are thick in the Seed Bed) you may take out a part of them, and tranſplant them into a Nurſery, in Rows, at three Feet Diſtance, and two Feet aſunder in the Rows; in which Place they may remain three or four Years; when they will be large enough to plant out for good.

If the Seeds of any of the Sorts of Maple are kept out of the Ground till Spring, they rarely come up the ſame Year, and many times do not grow; ſo that the ſureſt Method of raiſing them is, to ſow the Seeds as ſoon as poſſible when they are ripe; and, if the Seeds are to be tranſported to any Diſtance, it will be proper to put them up in Sand, whereby their growing Quality will be preſerved.

The 1ſt Sort is very proper to make Plantations near the Sea; or to ſhelter ſuch Plantations of Trees as are too nearly ſituated thereto. This Tree thrives, and reſiſts the Spray, which is uſually blown from the Sea, better than moſt other Trees do. The variegated Sort is alſo raiſed from Seeds of the ſame Kind; and moſt of the Plants ſo raiſed, will be as finely ſtriped as the old Plant from whence the Seeds were taken, which is not common to many other variegated Plants.

The common Maple is too well known to need any particular Account, it growing, very frequently, in Hedge-rows in moſt parts of *England.* It is raiſed in the ſame Manner with the former.

The *Virginian* flowering Maple was raiſed from Seeds which were brought from *Virginia* many Years ſince by Mr. *John Tradeſcant*, in his Garden at *South Lambeth*, near *Vauxhall*, and ſince, in the Gardens of the Biſhop of *London*, at *Fulham*, where it has flowered for ſeveral Years, and produces ripe Seeds, from whence ſeveral Trees have been raiſed. It may be alſo propagated by laying down the young Branches early in the Spring, giving them a little Slit at a Joint, by which Means they will have taken ſufficient Root by that time twelve Months to be tranſplanted elſewhere. They require a Situation a little defended from the North-eaſt Winds, eſpecially while young; and delight in a moiſt light Soil, in which they thrive much better than in a dry Ground, and will produce more Flowers, and better Seeds. This Tree commonly flowers in the beginning of *April*, and the Seeds are ripe in five or ſix Weeks after; at which Time they ſhould be ſowed; for they are very apt to periſh, if kept long out of the Ground.

There is another Variety of the flowering Maple, which was ſent from *America* to Sir *Charles Wager*, and flouriſhed ſeveral Years in his curious Garden at *Parſons-green*, near *Fulham.* This is by the Gardeners titled Sir *Charles Wager*'s flowering Maple. The Flowers of this Kind come out in very large Cluſters, and ſurround the younger Branches, ſo as to appear at a ſmall Diſtance covered with them. This Tree is now become common in the curious Nurſeries near *London*, ſo that the former Sort is not ſo much eſteemed, being leſs beautiful; but it is doubtful if they are diſtinct Species.

The Aſh-leaved Maple is a very ſtrong ſhooting Tree, and is in *Virginia*, one of the largeſt Trees of this Kind. It muſt be planted in Places not too much expoſed to violent Winds, being ſubject to ſplit thereby. This Tree ripens Seeds very well in *England*, by which means it is eaſily propagated, or by laying down the Branches, alſo by Cuttings planted in Autumn.

The *Norway* Maple grows with us to a very large Size, equaling the other Maple for Bulk, and I believe will anſwer teh ſame Purpoſe, for ſheltering Plantations near the Sea; and is by far the handſomer Tree near a Habitation. For the greater Maple is very ſubject to exude a ſweet clammy Juice from the Pores of their Leaves, which lodges upon their Surfaces, and thereby entices vaſt Quantities of Inſects, which eat the Leaves full of Holes, and render them unſightly.

The *Norway* Maple has a milky ſharp Juice, ſo that few Inſects care to prey thereon: by which means the

Leaves are ſeldom eaten or defaced; and being ſmooth, and of a ſhining Green, they have a much better Appearance than thoſe of the Sycamore; and in the Spring, when the Flowers are out, have great Beauty. This Tree is alſo raiſed by Seeds, of which it affords great Quantities, which riſe and grow from the ſcattered Seeds as well as the common Sort.

It may alſo be propagated by Cuttings, which, if planted in Autumn, ſoon after the Leaves are fallen, will take Root as well as the common Willow; ſo that this being the moſt expeditious Method of propagating this Tree, it is chiefly practiſed by ſkilful Perſons.

The variegated Kind is propagated by inoculating a Bud of the ſtriped Kind into one of the plain Sort, though I am not ſure whether it will take upon any other Sort of Maple, not having made the Experiment; but I believe it can ſcarce fail. Moſt, if not all the other Sorts of Maples, take very well upon each other.

The *American* Sugar Maple has ſome Reſemblance to the *Norway*, when the Plants are young, but as they grow up the Leaves are more deeply divided, and their Surfaces leſs ſmooth, ſo that they are then eaſily diſtinguiſhed. From this Tree the Inhabitants of *North America* make a very good Sort of Sugar and in large Quantities, by tapping the Trees early in the Spring, and boiling the Juice, which drawn out till the Fæces ſubſide, is the Sugar; for I have found that the Aſh-leaved Maple abounds with a ſaccharine Juice, in full as great Plenty as any other Sort. Mr. *Ray* and Dr. *Liſter*, prepared a tolerable good Sort of Sugar from our greater Maple, by tapping ſome of the Trees in their bleeding Seaſon; and I have obſerved, upon cutting off Branches from the ſcarlet Maple in *February*, a great Quantity of a very ſweet Juice hath flowed out for ſeveral Days together.

The 8th Sort of Maple is very common in moſt Parts of *Italy*, but particularly about *Rome*, where it is one of the largeſt Trees of that Country, and is eſteemed for the Size of the Leaves, which are large, affording a great Shade; ſo that theſe Trees are frequently planted by the Sides of Roads, and near Habitations. In *England* this Tree is very rarely to be met with, though it is hardy enough to bear the open Air; but as the Seeds have not been brought over to *England* till lately, there are no large Plants in the *Engliſh* Gardens at preſent.

The 9th Sort is common in the South of *France* and *Italy*, the Leaves of this reſemble thoſe of the common Maple, but are of a much thicker Subſtance, and not ſo large, and of a ſhining green Colour. They continue in Verdure very late in the Autumn, which renders them more valuable. At preſent this Sort is not common in *England*. I raiſed ſeveral Plants from Seeds a few Years paſt, ſome of which I communicated to curious Perſons to propagate, that the Species might be more common. Thoſe Plants which remain in the *Chelſea* Garden, grow full as well as the common Maple, and are equally hardy; for in ten Years, which they have been growing abroad, I have never obſerved that any Part of their Shoots have been injured by the Froſt.

The 10th Sort hath ſome Reſemblance to the 9th, which has led Dr. *Linnæus* into a Miſtake; for he ſuppoſes them to be the ſame Species, but if he had ſeen the Plants, he could not have doubted of their being different. The Leaves of this tenth Sort, being of a much thinner Texture, and both them and their Foot Stalks, covered with a ſoft hairy Down, whereas thoſe of the other, are quite ſmooth and ſtiff. This Sort grows naturally in the *Levant*.

The 11th Sort hath oval Leaves, which are placed oppoſite by Pairs, theſe are of the Colour and Conſiſtence of thoſe of the Box tree, and are always green. I was favoured with this Sort by Monſ. *Le Duc D'Ayen*, who ſent me the Plant from his curious Garden at *St. Germain*, the Seeds of which he received from the *Levant*. By the progreſs which this has made in *England*, it appears to be rather a Shrub than a Tree, but as it is an Ever-green, and will live in the open Air, ſo it is worthy of a Place in Gardens, where, in the Winter Seaſon it will add to the Variety.

The 12th Sort is alſo ſcarce in *England* at preſent. This is a Native of *Tartary*, from whence the Seeds were ſent to the Imperial Garden at *Peterſburg*, and I was favoured with a few of them, by the Gentlemen of the Academy there. This Plant is very hardy in reſpect to Cold, but is very difficult to raiſe in *England*; for when the Plants are young, if they are expoſed to the Sun but a few Hours, they will be deſtroyed. And though the Trees naturally grow on boggy Grounds, yet watering the young Plants much will kill them. The only Method to preſerve them, is to cover the Surface of the Ground with Moſs, which ſhould be kept moiſt, and the Plants entirely ſhaded from the Sun the firſt Summer.

Moſt of the Sorts of Maple which come from *America*, are alſo very impatient of Heat while young; their Seeds therefore ſhould be ſown in a ſheltered Situation, for if the Plants are expoſed to the full Sun but one Day, when they firſt appear, few of them will ſurvive it; but eſpecially the Sugar Maple, of which Sort I conſtantly loſt moſt of the Plants, till I had the Precaution to place the Pots, in which the Seeds were ſown, entirely in the Shade; for no ſooner are they expoſed to the Sun, but they are immediately attacked by Inſects, which in one Day will devour their Seed Leaves, after which the Plants ſuddenly drop to the Ground. This Precaution therefore is neceſſary to be obſerved, in raiſing moſt of the Sorts of Maple from Seeds.

The Timber of the common Maple is far ſuperior to the Beech for all Uſes of the Turner, particularly Diſhes, Cups, Trenchers, and Bowls; and when it abounds with Knots (as it very often doth), it is highly eſteemed by the Joiners for Inlayings, &c. and alſo for the Lightneſs of the Wood, is often employed by thoſe that make Muſical Inſtruments; and for its Whiteneſs, was formerly in great Requeſt for Tables, &c.

ACETOSA, Sorrel.

The *Characters* are,

It is male and female in different Plants; the male Plants have a three leaved Empalement, in which are included ſix Stamina, crowned with flat oblong Summits, but have no Corolla or Petals: The female Flowers have alſo a three leaved Empalement, in the Center of which is ſituated a three cornered Germen, ſupporting a trifid Stylus. The Germen afterwards turns to a triangular Seed.

The *Species* are,

1. ACETOSA *foliis ſagittatis inferioribus pediculatis caulinis ſeſſilibus.* Common or Meadow Sorrel. This is the *Acetoſa pratenſis. C. B. P.* 114.

2. Acetosa *foliis latiſſimis ad baſin auriculatis.* Greateſt Mountain Sorrel.

3. Acetosa *foliis lanceolato-haſtatis radice repente.* Common Sheep's Sorrel.

4. Acetosa *foliis cordato haſtatis radice repente.* Round leaved or *French* Sorrel.

5. Acetosa *humilis repens folio rotundo emarginato.* Low creeping Sorrel with a round indented Leaf.

6. Acetosa *foliis longiſſimis ad baſin auriculatis ſpicis florum longiſſimis.* Long leaved Mountain Sorrel.

7. Acetosa *foliis oblongis pediculis breviſſimis rarò florens.* Northern barren Sorrel.

The 1ſt of theſe Sorts, though but ſmall in the Fields, yet, when ſown in Gardens, will produce fair large Leaves, and is the ſame which is commonly cultivated in Gardens. It muſt be ſown early in the Spring, in a ſhady moiſt Border; and if the Plants are afterward removed into another ſhady Border, at the Diſtance of four or ſix Inches ſquare, they will produce larger Leaves, and continue longer. This is the common Sorrel uſed in Medicine; but the Northern barren Sorrel is preferred to it in the Kitchen Garden, becauſe it rarely runs to Seed, but is increaſed by parting the Roots either in Spring or Autumn, and is fit for Uſe all the Year.

The round leaved (or *French*) Sorrel is the moſt grateful Acid, and is by many Perſons preferred to the other two Sorts for Kitchen Uſe; it is alſo a medicinal Plant, and ſhould not be wanting in any good Garden: It is a great Runner at the Root, by which Means it is eaſily propagated, and muſt be planted at a large Diſtance, two Feet ſquare at leaſt: It will agree better with an open Situation than the other two Sorts. And if the Flower Stems and rambling Branches are cut off in the Beginning of *July*, the Roots will ſoon put out new Leaves, which will be tender and much better for Kitchen Uſes, than the older Leaves; ſo that by cutting down the Shoots of ſome Plants at different Times, there will always be a Supply of young Leaves, which is the only Part of the Plant uſed in the Kitchen. As this Sort is much preferable to the common Sorrel for Soups, ſo many Perſons have of late Years cultivated it in their Gardens, ſince the Uſe of Sorrel has been greatly encreaſed in *England*, by the Introduction of *French* Cookery, it being an Ingredient in many of their Sauces and Soups; inſomuch that about *Paris*, Sorrel is cultivated in great Quantity.

The Sheep's Sorrel is a common Weed in moſt Parts of *England*, growing upon dry Banks and in gravelly Soils in great plenty; for, as it propagates very faſt by its creeping Roots, ſo wherever it once gets Poſſeſſion in the Ground, it ſoon multiplies. This is rarely admitted to have a Place in Gardens, but as it has long been continued in the Diſpenſatories as a medicinal Plant, it is here inſerted.

The low creeping Northern Sorrel, is preſerved in many Gardens for the Sake of Variety, but has not been uſed in the Kitchen. This Sort grows wild in moſt of the Northern Counties, as alſo in *Wales*. I have ſeen it growing in great Plenty in *Yorkſhire* and *Weſtmorland*. The Leaves of this Sort have very ſhort Foot Stalks, and are indented at both Ends. Theſe grow near to the Ground, and the Flower Stems rarely riſe above ſix inches high. The Roots creep in the Ground, whereby it multiplies exceedingly in a proper Situation. As this Sort grows naturally in ſhady moiſt Places, ſo whoever is deſirous to have it thrive in a Garden, muſt plant it in a North Border and in a moiſt Soil, where it may be propagated in Plenty, and be uſed for the ſame Purpoſes as the others.

The two Sorts of Mountain Sorrel, are full as hardy as the common, and as their Leaves are much larger, ſo they are better for the Uſes of the Kitchen, having as pleaſant an acid Taſte, and being much more ſucculent. Theſe may be propagated either by Seeds, or parting of their Roots, in the ſame manner as the common Sort; but the Plants require more Room, for which Reaſon they ought not to be nearer than a Foot from each other, eſpecially in good Ground. Theſe are both very diſtinct Species, and do not vary when propagated by Seeds; the Leaves of the 2d Sort are much broader and rounder at their Extremity, than thoſe of the 6th, whoſe Leaves are very long, and the Ears at their Baſe much larger. They grow naturally in *Italy*, from whence I have received their Seeds.

ACETOSELLA. See *Oxys*.

ACHILLEA, Milfoil Yarrow, or Noſebleed.

The *Characters* are,

It hath a compound radiated Flower, conſiſting of many tubulous Florets which are hermaphrodite, and compoſe the Diſk of the Flower; the female Flowers are ranged round the Border, theſe have their Corolla ſtretched out on one Side like a Tongue, which compoſe the Rays, all included in one common ſcaly Empalement. The hermaphrodite Flowers have each five ſhort ſlender Stamina, accompanying a ſmall Germen, which is ſituated in the Bottom, and reſts upon a downy Bed, the Germen afterward becomes a ſingle oval Seed, having a Down adhering to it.

The *Species* are,

1. Achillea *foliis bipinnatis nudis, laciniis linearibus dentatis. Hort. Cliff.* 413. This is the *Millefolium vulgare album. C. B. P.* 140. or common Yarrow, called alſo Milfoil, Stratiotes, and Noſebleed. Of this there is a Variety with purple Flowers, which is often found growing naturally in *England*.

2. Achillea *foliis ſetaceis dentatis, denticulis ſubintegris ſubulatis reflexis. H. C. Tournefort*'s Eaſtern Sneezwort with a Lavender Cotton Leaf, and a large Flower.

3. Achillea *foliis pinnatis hirſutis pinnis linearibus dentatis. Lin. S. P.* Woolly Yarrow with yellow Leaves.

4. Achillea *foliis pinnatis, foliolis lanceolatis inciſis, ſerratis ſubtus lanigeris. Hort. Cliff.* 413. Eaſtern Sneezwort with hoary Tanſey Leaves, and the Rays of the Flower of a pale yellow Colour of *Tournefort*.

5. Achillea *foliis pinnatis ſupra decompoſitis, laciniis linearibus diſtantibus. Tournefort*'s talleſt Eaſtern Yarrow, with a Wormwood Leaf and yellow Flowers.

6. Achillea *foliis pinnatifidis planis obtuſis tomentoſis. Lin. Sp. Plant.* 898. Broad leaved Alpine umbelliferous Wormwood of *Cluſius* and *Bauhinis*.

7. Achillea *foliis pinnatis foliolis lineari lanceolatis baſi ſurſum auctis. Flor. Leyd. Prod.* 176. *Tournefort*'s Eaſtern Sneezwort with hoary Tanſey Leaves, and a golden Flower.

8. Achillea *foliis lanceolatis obtuſis acutè ſerratis. Hort. Cliff.* 413. Sweet Maudlin.

9. Achillea *foliis pinnatis foliolis obtuſè lanceolatis ſerrato dentatis. Hort. Cliff.* 413. *Tournefort*'s hoary Sneezwort with creſted Pinnulæ.

10. Achillea *foliis lanceolatis acuminatis argutè ſerratis. Lin. Sp. Plant.* 898. Common *Ptarmica* or Sneezwort. Of this Sort there is a Variety with double Flowers which is preſerved in Gardens.

11. Achillea *foliis pinnatis planis inciſo ſerratis extimis majoribus. Lin. Sp. Plant.* 898. Alpine Sneezwort with Feverfew Leaves of *Triumfetti* and *Barrelier*.

12. Achillea *foliis pinnatis dentatis hirſutis floribus glomeratis. Lin. Sp. Plant.* 899. Hoary Alpine Milfoil, with a ſpecious Flower of *John Bauhin*.

13. Achillea *foliis bipinnatis, pinnis diſtantibus utrinque ſubſeptenis obtuſiculis. Lin. Sp. Plant.* 899. Noble or Sweet Milfoil of *Tragus*.

14. Achillea *foliis lanceolatis dentato ſerratis denticulatis tenuiſſimè ſerratis. H. C.* Alpine Sneezwort with Leaves deeply ſerrated, commonly called White Maudlin.

The 1ſt Sort here enumerated, is the common Yarrow or Milfoil, which grows naturally on Banks and by the Sides of Foot Paths in moſt Parts of *England*, ſo is rarely allowed a Place in Gardens; but being an officinal Plant, it is here mentioned to introduce the others. It is eſteemed as a good vulnerary Herb, being cooling, drying, and binding, and is therefore ſerviceable in all Kinds of Hæmorrhages, whether ſpiting or vomiting of Blood, or bleeding at the Noſe; it likewiſe helps a Gonorrhœa. Of this common Yarrow, there is a Variety with purple Flowers, which is frequently found wild in *England*; but the Plants of it ſeldom continue to produce purple Flowers long, when they are tranſplanted into Gardens, and therefore can only be allowed as an accidental Variety. The Yarrow creeps greatly by its Roots, and alſo multiplies by Seeds, ſo that it becomes a troubleſome Weed, where it is permitted to grow.

The 3d Sort is often planted in Gardens for the Sake of Variety. This is of humble Growth, ſeldom riſing more than eight or nine Inches high. The Leaves are finely cut, and are very hoary; the Flowers are of a bright yellow Colour, and continue long in Beauty. It grows naturally in the South of *France*, *Spain*, and *Italy*, but will live in the open Air in *England*, provided it be planted in a dry Soil and a warm Situation. It is increaſed by parting of the Roots, the beſt Time for which is in *March* or *October*.

The 4th, 5th, 7th, and 9th Sorts, are Natives of the Iſlands in the *Archipelago*. Theſe were introduced into *France* by Dr. *Tournefort*, and from the Royal Garden at *Paris*, moſt of the Botanic Gardens in *Europe* have been ſupplied with their Seeds or Plants. The 9th Sort hath very hoary Leaves, which remain all the Year; and the Plants growing cloſe and low, make a pretty Appearance at all Seaſons. The Flowers are produced in Umbels on the Top of the Stalks, which are yellow; theſe are produced in *June*, *July*, *Auguſt*, and *September*, and are of long Duration, ſo that frequently ſome of them continue the greater Part of Winter. This Sort muſt have a dry Soil and a warm Situation, where it will endure the Cold of our ordinary Winters in the open Air, but in very ſevere Froſt they are often deſtroyed; a few Plants therefore ought to be ſheltered under a Frame in Winter, to preſerve the Kind. It is propagated by Slips, which may be taken off and planted in a ſhady Border, any Time in Summer, when they will take Root in about ſix Weeks, and then may be tranſplanted either into Pots, or the Borders, where they are to remain. This Sort rarely perfects its Seeds in *England*.

The 4th, 5th, and 7th Sorts, are of taller Growth, propagating by their Roots, and ripening Seeds in *England*, ſo that they may be obtained in Plenty; and as they require little Care to cultivate them, being hardy enough to live in the open Air, they may be allowed a Place in Gardens, where by their hoary Leaves, they will make a pretty Diverſity; and their Flowers continuing long in Bloom, though not the moſt beautiful, yet make a pretty Contraſt when intermixed with others.

The 6th Sort is a very humble Plant, the Foot Stalks which ſupport the Umbels of its Flowers, rarely riſe above ſix Inches high. As for the Flowers themſelves, they are near as large as thoſe of the common Sneezwort, white, and growing in flat Umbels; theſe are produced in *June* and *July*. The Leaves of the Plant have ſome Likeneſs to thoſe of the common Wormwood, and are very hoary, growing cloſe to the Ground, and decaying in Autumn, ſo that in Winter they make no Appearance. This Species of Yarrow is propagated by parting of the Roots, either in Spring or Autumn, and ſhould have a dry Soil, as much Wet in Winter will rot them. It never perfects its Seeds here, and therefore can only be multiplied the other Way. This Sort is a Native of the *Alps*.

The 8th Sort is commonly known by the Title of Sweet Maudlin in the Markets; it was formerly more uſed in Medicine than at preſent, ſo that there is ſcarce any of it cultivated in the Gardens for Sale; and when it is aſked for, the People in the Markets commonly give the 14th Sort for it, which being a very hardy Plant, and eaſily propagated, is now generally ſold for the other. For though the true Maudlin is hardy in reſpect to Cold, yet in wet Winters the Roots are often killed by Moiſture, eſpecially thoſe which are in good Ground; but when the Plants grow out of the Joints of Walls, or in Rubbiſh, they will live many Years without Care. There are two other Varieties of this Plant which are found growing naturally in *Spain*, one of them having longer and more compact Umbels of Flowers, and the other hath broader Leaves and ſmaller Flowers; but theſe approaching ſo near to the common Sort in every other Particular, I thought it would be needleſs to enumerate them as diſtinct Species. The common Maudlin is propagated by parting of the Roots, either in Spring or Autumn; and as it ripens Seeds very well, ſo it may be propagated by ſowing the Seeds in *April*. It flowers in *June* and *July*, and the Seeds are ripe in *September*.

The 10th Sort is the common Sneezwort; this grows wild in the Woods and other ſhady Places, in many Parts of *England*, ſo is not admitted into Gardens; this creeps greatly by its Roots, ſo as ſoon to cover a large Spot of Ground. It is ſometimes uſed in Medicine, and in the Spring the young tender Shoots are put into Sallads, to correct the Coldneſs of other Herbs; and the

Roots are uſed for the Tooth-ach, whence ſome have given the Title of Field Pellitory to this Plant. There is a Variety of this with double Flowers, which is preſerved in Gardens, and is commonly known by the Title of Double Maudlin. It is the ſame with the common Sort, differing only in the Flower being double. When this is planted in Pots, ſo as to confine the Roots from creeping, the Stalks will grow cloſer together, and then they make a tolerable Appearance when in Flower; but where the Roots have full Liberty to run, the Stalks grow farther diſtant from one another, in which Caſe they make but an indifferent Appearance. It flowers in *July* and *Auguſt*.

The 14th Sort has ſome Reſemblance to the 10th, but the Leaves are longer, deeper cut in on their Edges, and are of a darker green Colour. This propagates faſt enough by its creeping Root, and is very hardy.

The 11th and 12th Sorts are Natives of the *Alps*, and conſequently very hardy, and multiply by Seeds and parting of their Roots; they are perennial Plants, and will thrive in almoſt any Soil, but love an open Expoſure. The 11th produces many Stalks which riſe near three Feet high, having looſe branching Umbels of white Flowers on their Top, reſembling thoſe of the common Sneezwort, but larger. The 12th Sort hath hoary Leaves, and the Umbels of its Flowers are more compact; the Stalks of this do not riſe more than a Foot high. Both theſe deſerve a Place in Gardens.

The 13th Sort approaches near the 1ſt, but the Leaves are of a pale Green, and not ſo long, or ſo much cut as thoſe of the firſt; theſe have a ſtrong ſweet Scent when bruiſed. It is equally hardy with the firſt, and therefore requires little Culture.

ACHRAS, *Lin.* *See* Sapota.

ACHYRANTHES.

The *Characters* are,

The Empalement conſiſts of five pointed rigid Leaves which are permanent; the Flower hath no Petals; but in the Center of the Empalement is ſituated the Pointal, having a bifid Stigma, attended by five Stamina, ſupporting ſmall Summits. The Pointal afterward becomes a ſingle roundiſh Seed, incloſed in the Empalement.

The *Species* are,

1. ACHYRANTHES *caule erecto, calycibus reflexis ſpicæ adpreſſis. Fl. Zeyl.* 105. *Achyranthes* with an upright Stalk, and a reflexed Flower Cup adhering to the Stalk.

2. ACHYRANTHES *caule erecto, foliis obverſe ovatis undulatis floribus reflexis, i. e. Achyranthes* with an erect Stalk, obverſe oval waved Leaves and reflexed Flowers.

3. ACHYRANTHES *caule erecto, ſpicâ interruptâ, floribus externe lanatis. Lin. Sp. Plant.* 204. *i. e. Achyranthes* with an upright Stalk, a looſe Spike, and the Outſide of the Flower woolly.

4. ACHYRANTHES *caule erecto ſpicis ovatis lateralibus calycibus lanatis. Achyranthes* with an erect Stalk, and oval Spikes of Flowers produced from the Wings of the Leaves which are covered with a ſoft Down.

The 1ſt Sort has been long in the *Engliſh* Gardens, where it has been preſerved more for the Sake of Variety, than for its Beauty or Uſe. It grows near three Feet high, with oblong pointed Leaves; the Flowers come out in long Spikes from the Extremity of the Branches which are compoſed of an Empalement, with a Style and five Stamina, but hath no Petals, ſo may be ranged under the Claſs of Blink Flowers. The Plants of this Sort muſt be raiſed on a hot Bed, and when they have acquired Strength, they may be tranſplanted into the full Ground, where they will flower in *July*, and their Seeds ripen in *September*. If theſe be kept in Pots, and put into a warm Green-houſe in Winter, they will live two or three Years; but as there is no Beauty in the Plants, ſo few Perſons care to allow them a Place in the Green-houſe. This Sort grows naturally in the Iſlands of *America*, alſo in *India* and *Sicily*.

The Seeds of the 2d Sort I received from *Malabar*, which have for ſome Years flouriſhed at *Chelſea*, and annually produced ripe Seeds, which have never varied from the Parent Plant.

The 3d and 4th Sorts grow naturally at the *Cape of Good Hope*, from whence I received their Seeds.

They may all be propagated in the ſame manner as the 1ſt, and will perfect their Seeds the ſame Year; but the Plants of the 3 laſt Sorts may be preſerved through the Winter if placed in a Stove, for they are too tender to be kept in a Green-houſe where there is not artificial Heat.

ACINOS, Stone *or* Wild Baſil.

The *Characters* are,

It hath Leaves like thoſe of the leſſer Baſil: the Cup of the Flower is oblong and furrowed: The Flowers are produced in Bunches, on the Top of little Foot Stalks, which ariſe from between the Foot Stalk of the Leaf, and the Stalk of the Plants, in which it differs from Serpyllum.

The *Species* are,

1. ACINOS *multis. J. B.* Wild Baſil.

2. ACINI *pulchra ſpecies. J. B.* Broad leaved *Auſtrian* Wild Baſil.

The 1ſt of theſe Plants is very common on dry arable Land in many Parts of *England*, but eſpecially on gravelly or chalky Hills: It is an annual Plant, ſowing itſelf, and riſing again early in the Spring. It is not cultivated in Gardens, nor doth it care to grow in good Ground; but may be propagated in a dry poor Soil, by ſowing the Seeds as ſoon as they are ripe. This Plant hath been brought to the Markets by the Herb Women for the Mountain Poley.

The 2d ſort grows naturally in *Auſtria, Iſtria*, and *Bohemia*, from whence I have received the Seeds: It is preſerved in curious Botanic Gardens, but is a Plant of no great Beauty or Uſe.

ACONITUM, Wolfsbane, or Monkſhood.

The *Characters* are,

The Flower hath no Empalement, but conſiſts of five unequal Petals, (which vary in different Species) the Galea (or Hood) is tubulous, and covers the other Parts of the Flower like a Friar's Cowl; the two lateral Petals, which incloſe the Stamina and Style are equal: Theſe are concave and ſlightly indented in the Middle. The two lower Petals are narrow and oblong: In the Bottom of the Flower are placed two Nectariums, upon which are ſituated the Styles; in ſome there are two, in others three, and ſome have five: Theſe are forked, and ſtretched out far beyond the Stamina, which are numerous and irregular; after the Flower is paſt, the Germen become oblong Seed Veſſels terminated in a Point, *a Point, and coaleſcing at their Baſe; theſe have but one Cell, which is filled with angular rough Seeds.*

The *Species* are,

1. ACONITUM *foliis palmatis multifidis villoſis. Lin. Sp. Plant.* 532. Yellow Wolfsbane or Monkſhood, with palmated hairy Leaves finely divided.

2. ACONITUM *foliis palmatis nervoſis glabris.* Greateſt yellow Wolfsbane, with nervous ſmooth palmated Leaves.

3. ACONITUM *foliis multifidis laciniis ſemipartitis ſuperne latis. Hort. Cliff.* 214. Leſſer Wolfsbane with blue Flowers, whoſe under Leaves are cut into many Parts, and whoſe upper have broader Segments.

4. ACONITUM *floribus pentagynis. Lin. Sp. Plant.* 532. Wholeſome Wolfsbane with yellow Flowers.

5. ACONITUM *foliorum laciniis linearibus ſuperne latioribus linea exaratis. H. C.* Wolfsbane or Monkſhood, with large blue Flowers.

6. ACONITUM *foliis multipartitis, ſpicis florum longiſſimis.* The common blue Monkſhood, with a long Spike of Flowers.

7. ACONITUM *foliorum laciniis pinnatifidis flore maximo.* Large flowered Monkſhood, or Wolfsbane of a blue purple Colour.

8. ACONITUM *foliis multipartitis laciniis linearibus incumbentibus ſquamoſis. Hort. Upſal.* 152. Yellow *Pyrenean* Monkſhood, or Wolfsbane, with fine cut Leaves.

9. ACONITUM *foliorum laciniis linearibus, ſpica florum inflexo.* Monkſhood with Leaves finely jagged, and a bending Flower Spike.

10. ACONITUM *elatius, foliis palmatis flore magno albo.* Eaſtern Monkſhood, with a tall Stalk and a large white Flower.

The 6th Sort is the moſt common in the *Engliſh* Gardens; this is cultivated for the Beauty of its long Spike of blue Flowers, which are brought to the Markets in *London*, toward the end of *May*, when it commonly flowers; ſo that theſe being intermixed with the *Guelder* Roſes and other Flowers of the ſame Seaſon, make an agreeable Variety when properly blended, to adorn Halls and other Apartments. But as moſt of the Species of Monkſhood are a deadly Poiſon, not only to Men but to Brutes alſo, they ought not therefore to be admitted into Places where Children or ignorant Perſons frequent, leſt by ſmelling to theſe Flowers, they ſhould draw ſome of the *Farina* into their Noſtrils, which may prove very hurtful to them, as I can from Experience aſſert for Fact. We have an Account of a Man who was poiſoned in the Year 1732, by eating Part of a Plant of this Kind, which by an unſkilful Perſon was put into a Sallad inſtead of Celery. This is particularly mentioned in the *Tranſactions* of the Royal Society, N° 432. *Dodonæus* alſo alſo relates a Story of the bad Effects of one Species of Monkſhood, which was recent in his Time. Some unſkilful Perſons had gathered the young Shoots of the blue Monkſhood to eat in a Sallad, and all that eat of them were ſeized with terrible Symptoms, and ſoon died. Dr. *Turner* alſo mentions that ſome *Frenchmen* at *Antwerp* eat the Shoots of this Plant for thoſe of Maſterwort, and all of them died in two Days, except two Players who threw them up by Vomit. I have known Perſons who by ſmelling to the Flowers, have been ſeized with ſwooning Fits, and have loſt their Sight for two or three Days.

The 4th Sort is that which is made Uſe of in Medicine and is eſteemed an Antidote to thoſe which are poiſonous. This is by ſome Writers titled *Anthora*, and by others *Antithora*, as the poiſonous Kinds have been called *Thora*. Whenever therefore any of the Species of this Genus is ordered in Medicine, this is the Sort intended.

Moſt, if not all the other Sorts are eſteemed poiſonous; but thoſe with blue Flowers are ſuppoſed to be of a much ſtronger Quality, than the yellow or white flowered Kinds. It is affirmed, that the Huntſmen on the *Alps*, who hunt the Wolves and other wild Animals, dip their Arrows in the Juice of theſe Plants, which renders the Wounds made by them deadly.

The 6th Sort is the firſt which flowers; this grows near four Feet high, and the Spikes of Flowers are upward of two Feet long, ſo that when it is in Flower, it makes a pretty Appearance; and being very hardy, growing in any Soil or Situation, and multiplying greatly by the Root, has induced many Perſons to allow it a Place in their Gardens, for the Sake of its Flowers, who being ignorant of its dangerous Qualities, have permitted it to ſpread and propagate greatly. It flowers in *May* and *June*, and ſometimes in cool moiſt Seaſons, or in a ſhady Situation, the Flowers will continue till the Middle of *July*. The Seeds are ripe in *September*; but as this Sort multiplies ſo greatly by the Root, ſo it is rarely propagated the other Way.

The 1ſt and 2d Sorts are the next which flower; theſe come about the Middle of *June*, and if the Seaſon is not warm, will continue in Flower till *Auguſt*. The 1ſt grows upward of three Feet high, and the ſecond above four, the Spikes of Flowers too in this being much longer than the former.

The 3d Sort flowers a little later than either of thoſe, but ſeldom grows more than two Feet high, and the Spikes of Flowers are much ſhorter than either of the two laſt.

The wholeſome Wolfsbane flowers in the Middle of *Auguſt*, and often continues in Beauty till the Middle of *September*; the Flowers are not ſo large as of ſome other Sorts, but being of a ſulphur Colour, make a pretty Appearance in the Borders of the Flower Garden. This Sort will not thrive ſo well under the Shade of Trees as many other Sorts will do, and therefore muſt have an open Expoſure.

The 9th and 10th Sorts flower the Beginning of *July*. The 9th uſually grows about four feet high, but the 10th I have ſeen upwards of ſix. This Sort is at preſent very rare in *Europe*. It was found by Dr. *Tournefort* in the *Levant*, who ſent the Seeds to the Royal Garden at *Paris*, where it was firſt cultivated in *Europe*, and from that Garden, others have been furniſhed with the Seeds.

The 8th Sort flowers in *July*. This grows about four Feet high, having a long Spike of yellow Flowers of a middling Size, wherefore they may be allowed a Place among Shrubs, or in ſuch Parts of the Garden as are not frequented by Children.

The 5th, 6th, and 7th Sorts flower in *Auguſt*, when they make a pretty Appearance, and were it not for their noxious Quality, would deſerve a Place in every Garden.

There are two or three Varieties of the 5th Sort, one with white, another with roſe coloured, and a third with variegated Flowers; but as theſe are only Varieties which often change, ſo I have not put them down as diſtinct Species, becauſe they frequently vary in the ſame Plant. The *Napellus minor*, is alſo apt to change in the Colour of its Flower; of this Sort I have had ſome Plants with variegated Flowers, but they changed in two Years and became plain, nor did their Seeds produce any Plants with variegated Flowers. The 7th Sort will grow to the Height of five Feet in good Ground; the Flowers are very large, but not many upon each Spike. Theſe are of a deep blue Colour.

All the Sorts of Monkſhood may be propagated by Seeds, which ſhould be ſown early in the Spring in a ſhady Situation: Some of the Plants often come up the firſt Year, but it is generally the ſecond Spring before they appear; therefore the Ground ſhould be kept clean from Weeds all the following Summer, and when the Plants come up, they ſhould be watered in dry Weather until they are fit to tranſplant; when they are to be carefully taken up, and planted in ſhady Borders, at the Diſtance of four inches each Way, obſerving to water them until they have taken good Root in the Ground; after which Time they will require no other Care but to keep them clean from Weeds, till the following Autumn, when they may be tranſplanted to the Places where they are to remain.

The common Monkſhood will grow under the Shade of Trees, in Wilderneſſes or Woods, and will increaſe faſt enough by means of its creeping Roots; but though moſt of the other Sorts delight in Shade, yet few of them will thrive under Trees, for which Reaſon they ſhould be planted in ſhady Borders which are not over-hung by Trees, where they will continue much longer in Flower, and thrive better than in an open Expoſure.

They may alſo be propagated by parting of their Roots, the beſt Time for which is in the Autumn, that their Roots may be well eſtabliſhed before the Spring, otherwiſe they will not flower ſtrong the firſt Summer.

ACONITUM HYEMALE. *See* Helleborus.

ACORUS, the Sweet Ruſh.

The *Characters* are,

It hath a ſimple cylindrical Stalk, which is cloſely covered with ſmall Flowers ſo as to form a Sort of Catkin (or Julus). Theſe Flowers have no Empalement, but are compoſed of ſix concave obtuſe Petals. In the Center of the Flower is ſituated a ſwelling Germen, attended by ſix Stamina, which are extended beyond the Petals, and are crowned with thick double Summits, the Germen afterwards turns to a ſhort triangular Capſule, having three Cells, in which are lodged oval oblong Seeds.

We have but one *Species* of this Plant, which is,

Acorus. *Roy. Prod. Leyd.* 6. The ſweet ſmelling Flag or Calamus. This is the *Acorus verus ſive calamus aromaticus. C. B. P.* 34. The true Acorus of the Shops.

This Plant grows naturally in ſtanding Waters which are ſhallow, and is found wild in ſome Parts of *England*; particularly in *Norfolk*, and alſo near *Uxbridge* in *Middleſex*, and in ſeveral parts of the North. In *Holland* this Plant abounds in moſt of their Ditches and ſtanding Waters. The Leaves of this Plant when broken, ſend forth a ſtrong Aromatic Scent; but the Roots, which are much ſtronger, have been long uſed in Medicine. This may be tranſplanted into a Garden, where if the Ground be moiſt, it will grow very well; but never produces its Spike, unleſs it grows in the Water. It loves an open Situation, and will not thrive well under the Shade of Trees. The Spikes of Flowers (which are by many Writers termed *Juli*) appear toward the latter End of *June*, and continue till *Auguſt*. When this Plant is fixed in a proper Situation, it will multiply by its creeping Roots faſt enough.

The Roots which are uſed in Medicine, are hot and dry, opening and attenuating, and thus are eſteemed good for removing Obſtructions of the Liver and Spleen, to provoke Urine and the Menſes, as alſo to reſiſt Putrefaction, and to be good againſt Peſtilence.

ACRIVIOLA. *See* Tropæolum.

ACTÆA, Herb Chriſtopher. *Chriſtophoriana. Tourn.*

The *Characters* are,

The Empalement of the Flower is compoſed of four concave obtuſe Leaves which fall off, and the Flower itſelf hath four Petals which are much larger than the Empalement. In the Center is placed the oval Germen, crowned with an oblique compreſſed Stigma, which is attended by numerous ſlender Stamina, crowned with double roundiſh Summits. After the Flower is paſt, the Germen becomes an oval or globular Berry, having one Cell, in which are lodged four Seeds, which are roundiſh on their Outſide, but angular where they are joined.

The *Species* are,

1. Actæa *racemo ovato fructibuſque baccatis. Lin. Sp. Pl.* Common Herb Chriſtopher, or Bane Berries.
2. Actæa *recemo ovato baccis niveis, radice tuberoſa. American* Herb Chriſtopher with white Berries.
3. Actæa *racemis longiſſimis fructibus unicapſularibus. Lin. Sp. Pl.* 504. *American* black or wild Snakeroot.

The 1ſt Sort grows naturally in ſome Parts of the North: I found it in pretty great Plenty in a Wood near *Kirby Londſdale*, as alſo near *Ingleborough Hill* in *Yorkſhire*. It grows about a Foot and a Half high, the Foot Stalks of the Leaves ariſe from the Root, and are long; theſe divide into three ſmaller Foot Stalks, each of which divide again into three, and theſe have each three Lobes, ſo that each Leaf is compoſed of twenty-ſeven Lobes (or ſmall Leaves). The Flower Stem which ariſes from the Root, is garniſhed with Leaves of the ſame form, but are ſmaller. On the Top of the Stalk appears the Flowers, which grow in ramoſe Spikes, and are of a pure White; theſe come out in *May*, and are ſucceeded by black ſhining Berries about the Size of Peaſe, which ripen about *Michaelmas*.

It is propagated by Seeds, which ſhould be ſown ſoon after they are ripe; for if they are kept out of the Ground till Spring, the Plants will not come up till the Year after, ſo that a Year will thus be loſt. The Seeds ſhould be ſown on a ſhady Border, which muſt be kept clean from Weeds, otherwiſe the young Plants will be overborne by them and deſtroyed. As the Seeds ſeldom come up all at the ſame Time, ſo the Border in which they are ſown ſhould not be diſturbed till the following Autumn, when the Plants are to be tranſplanted into a ſhady Border, where they may remain to flower. This Plant hath a perennial Root, which laſts many Years, but the Stalk is annual, and periſhes in Autumn, ſoon after which is the beſt Time to tranſplant them.

The 2d Sort grows naturally in *North America*, from whence I have received the Seeds; the Leaves of this are ſomewhat like thoſe of the 1ſt Sort, but are not ſo deeply indented on their Edges. The Flowers grow in a more compact Spike, and the Berries are very white and tranſparent when ripe; the Root of this is compoſed of thick Tubers, or Knobs. This is an abiding Plant, and delights in a light moiſt Soil, and a ſhady Situation; it may be propagated in the ſame Manner as the former.

There is alſo another with red Berries, which grows naturally in the ſame Country, but I do not know whether it be a diſtinct Species, or only an accidental Variety, for the Seeds which I received of this did not grow, nor have I as yet ſeen any of the Plants.

The 3d Sort is alſo a native of *America*, where it is called *Black Snakeroot*, to diſtinguiſh it from the common. This Plant hath large compound Leaves, which ariſe immediately from the Root, and are branched after the ſame Manner as the firſt Sort. The Flower Stems frequently riſe to the Height of four or five Feet, being terminated by a long Spike of white Flowers, which is reflexed at the Top. This flowers in *June*, but I have not yet ſeen any Seeds produced in *England*. During the Time of its flowering, the Plant makes a good Appearance in a Garden, and therefore deſerves a Place in the ſhady Borders, or among Shrubs, where if it be not over-hung by them, it thrives very well, and being hardy, will require no other Care than the Shrubs themſelves. It may be propagated by parting the Roots; the beſt Time for which, is ſoon after the leaves decay in Autumn; it loves a moiſt light Soil, and a ſhady Situation.

The Root of this Plant is greatly uſed by Apothecaries and Phyſicians, in *North America*, in many Diſorders, and is ſuppoſed to be an Antidote againſt Poiſon, or the biting of the Rattle-Snake.

ADANSONIA, *Ethiopian* ſour Gourd.

This Plant is ſo named from one Mr. *Adanſon*, a *French* Surgeon, who reſided ſome Years at *Senegal* in *Africa*, and during that Time made ſeveral Diſcoveries in Natural Hiſtory, and brought home a curious Collection of Seeds, and many Drawings of Plants, Animals, and Inſects, which are engraving at *Paris*, and will be publiſhed with his Obſervations; and from him we may expect to have the Characters of this Plant truly exhibited; for though the Plants have been many Years in *England*, yet none of them have produced Flowers, ſo that we are at a loſs for the Characters. The Fruit I have ſeen, which is large, of an oval Form, having a hard Shell like a Gourd, which is covered over with a ſoft Down; the Seeds are lodged in a ſoft Pulp, which becomes hard and brittle as the Shell dries; theſe are ſhaped almoſt like the Nuts of Chocolate, and are of a dark Colour.

We have but one Species at preſent in *England*, viz.

ADANSONIA *foliis inferioribus ſimplicibus, ſuperioribus trilobatis vel quinquelobatis, caule erecto arboreo. Adanſonia* with under Leaves ſimple, and the upper Leaves divided into three or five Lobes, and an erect Stem.

The young Branches of theſe Trees have ſingle ſpear-ſhaped Leaves towards their lower Part, but at their Extremities the Leaves have ſome three, and others five Lobes, of the ſame Size and Form as the lower, which are diſpoſed like a Hand; theſe are entire, ending in a Point, and fall off in Winter. The Stems are large and woody, but of a ſoft Texture, and have a large Swelling near the Root.

This Plant is propagated by Seeds, which muſt be procured from the Country where is grows naturally (for it doth not produce any in *Europe*) the Seeds muſt be ſown in Pots, and plunged into a hot Bed, where, in about ſix Weeks, the Plants will come up, and in a ſhort Time after be fit to tranſplant, when they ſhould be each planted into a ſeparate Pot, filled with a light ſandy Earth, and plunged into a freſh hot Bed, obſerving to ſhade them until they have taken new Root, after which Time they ſhould have free Air admitted to them every Day in warm Weather, but muſt be ſparingly watered; for as their Stems are ſoft (eſpecially when young) too much wet will cauſe them to rot. As the Plants advance in their Growth, they are to be ſhifted into larger Pots, but muſt conſtantly be plunged into the Bark Bed, being too tender to thrive in this Country without this artificial Heat, therefore they muſt conſtantly remain in the Stove with other tender exotic Plants.

We had ſome Plants of this Sort in ſeveral Gardens, which were raiſed from Seeds obtained from *Grand Cairo* in the Year 1724, by the late Dr. *William Sherard*, many of which were grown to the Height of eighteen Feet; but in the ſevere Winter 1740, they were all loſt, and ſince that Time there has not been any of the Seeds brought to *England*, till the Return of Mr. *Adanſon* to *Paris*, who ſent ſome of the Seeds over here, which have ſucceeded, and many of the Plants are now upwards of ſix Feet high.

ADENANTHERA, Baſtard Flower-fence.

The *Characters* are,

The Empalement of the Flower is of one Leaf, ſlightly cut into five at the Top; *the Flower is of the bell-ſhaped Kind, and is compoſed of five Petals, which are reflexed and concave on their under ſide. In the Center is ſituated an oblong Germen, ſupporting a Style crowned with a ſingle Stigma*; *this is attended by ten erect Stamina of the ſame Length, which are crowned with roundiſh Summits*; *after the Flower is paſt, the Germen becomes a long compreſſed Pod, containing many convex ſmooth Seeds, placed at a Diſtance from each other.*

We have but one Species in the *Engliſh* Gardens, at preſent, *viz.*

ADENANTHERA *foliis decompoſitis. Prod. Leyd.* 462. Baſtard Flower-fence with decompounded Leaves.

There is another Species of this Kind with ſcarlet Seeds, but this is not in the *England* Gardens at preſent: I have ſeveral Times received the Seeds of it from *India*, but they have been ſo old as to have loſt their growing Quality, though by the Shape of the Seeds, they ſeem to be of this Genus.

The Sort here mentioned grows to a very large Tree in its native Country, but it is ſo tender as to require a Stove to preſerve it through the Winter in *England*, ſo that there are no Plants of any large Size in the *Engliſh* Gardens at preſent, but the young Plants which are not more than two Feet high, have large branching Leaves, compoſed of many equal Diviſions, and each of theſe garniſhed with ſmall oval Leaves, which are placed alternately on the mid Rib, and are of a deep green Colour. The Stems of the Plants are woody, and of a brown Colour, the Leaves continue all the Year. There hath not been any Flowers produced in *England* as yet, but by ſome dried Samples which were brought from *India*, they ſeem to be ſmall, and of little Beauty; the fine branching Leaves of the Plant, however, make a very handſome Appearance in the Stove. The Seeds are of a ſhining black Colour, and are ſomewhat larger than thoſe of the great Lentil, and nearly of the ſame ſhape. This Plant muſt be raiſed on a hot Bed, and afterwards placed in the Bark Stove with other tender Exotics.

ADHATODA. See *Juſticia*.

ADIANTHUM, *i. e.* Maidenhair.

The *Characters* are,

This Genus is diſtinguiſhed from the other capillary Plants by the Fructification, being confuſedly joined in oval Spots, and the Points of the Leaves reflexed.

The *Species* are,

1. ADIANTHUM *frondibus decompoſitis foliis alternis pinnis cuneiformibus lobatis pedicellatis. Lin. Sp. Plant.* 1096. The true Maidenhair.

2. ADIANTHUM *fronde pedatâ foliolis pinnatis pinnis antice gibbis inciſis fructificantibus. Lin. Sp. Plant.* 1095. *American* Maidenhair.

3. ADIANTHUM *frondibus ſupradecompoſitis foliolis alternis, pinnis rhombeis inciſis utrinque fructificationibus. Lin. Sp. P.* Largeſt black *American* Maidenhair.

There are a great many Species of this Genus, which are Natives of the *Eaſt* and *Weſt-Indies*; theſe greatly differ in Size and Form from each other. I have upwards of thirty diſtinct Species in my Collection of dried Plants, which to enumerate in this Place, would be ſuperfluous, as they have not been introduced into the *Engliſh* Gardens. The three Sorts here mentioned, are all that I have ſeen growing in *England*.

The 1ſt Sort is the true Maidenhair, which is directed to be uſed in Medicine; but as it is not natural to *England*, the *Trichomanes* is uſually ſubſtituted for it, which is found growing wild in Plenty in ſeveral Parts of *England*. The other is a Native of the South of *France*, *Italy*, and the *Levant*. It uſually grows out of the Joints of Walls, and the Fiſſures of Rocks, ſo that whoever is inclinable to keep this Plant in his Garden, ſhould plant it in Pots filled with gravel and lime Rubbiſh, in which it will thrive better than in good Earth; but the Pots muſt be ſheltered under a Frame in Winter, otherwiſe the Plants are often killed by Froſt.

The 2d Sort is often preſerved in Gardens for the ſake of Variety; this may be preſerved in Pots, and treated in the ſame Manner as the former, for although it will live through the Winter in the open Air in moderate Seaſons, yet in ſevere Froſt it is often deſtroyed. This grows naturally in *Canada* in ſuch Quantities, that the *French* ſend it from thence in Package for other Goods, and the Apothecaries at *Paris* uſe it for the Maidenhair in all their Compoſitions, in which that is ordered.

The 3d Sort grows naturally in very warm Countries; I received it from *Jamaica* in a Tub of Earth among other Plants; this Sort will not thrive in *England*, unleſs it be preſerved in a Stove, where its ſhining black Stalks, and odd ſhaped Leaves, will afford an agreeable Variety among other exotic Plants.

ADONIS, or FLOS ADONIS, Bird's-eye, or Pheaſant's-eye.

The *Characters* are,

The Empalement of the Flower is compoſed of five concave obtuſe Leaves which fall off; the Flower is compoſed in ſome Species of five Petals, and in others of twelve or fourteen, theſe expand in form of a Roſe; in the Center there are many Germina collected in a Head, which are attended by a great Number of ſhort Stamina, crowned by oblong inflexed Summits; after the Flower is paſt, the Germina become ſo many naked Seeds, cloſely adhering to the Pedicle, and forming an obtuſe Spike.

The *Species* are,

1. ADONIS *floribus octopetalis fructibus ſubcylindricis. Hort. Upſal.* 156. The common *Adonis*, or *Flos Adonis*, with ſmall red Flowers, of late called *Red Morocco*.

2. ADONIS *floribus pentapetalis fructibus ovatis.* The annual *Adonis* with pale yellow Flowers.

3. ADONIS *floribus polypetalis, fructibus obtuſis, radice perenne.* Perennial *Adonis* with yellow Flowers, by ſome titled fennel-leaved black Hellebore.

There is a Variety of the 1ſt Sort, which hath been long cultivated in Gardens; the Flowers are larger, and the Leaves ſhorter, than thoſe of the wild Sort, but, from repeated Trials of ſowing their Seeds ſeparately, they appear to be only accidental Variations ariſing from Culture, and may be properly eſteemed as ſuch.

The 2d Sort is undoubtedly a diſtinct Species, although Dr. *Linnæus* ſuppoſed it to be only a Variety of the 1ſt. I cultivated both above thirty Years, and never obſerved the 2d to vary in the Shape of its Leaves, Colour, Make of the Flower, or Growth of the Plants, which are much taller than the 1ſt, the Leaves thinner, ſparingly ſet on the Stalks, and of a lighter Colour.

Both theſe Sorts are annual, and if the Seeds are ſown in Autumn, the Plants will come up the following Spring; but when the Seeds are not ſown till Spring, they rarely come up the ſame Year. So that when the Seeds are permitted to fall on the Ground, they generally ſucceed better than when ſown by Art. The 1ſt Sort grows naturally in *Kent*, particularly by the Sides of the River *Medway*, between *Rocheſter* and *Maidſtone*, where it is found in great Plenty in the Fields which are ſown with Wheat, but in the intermediate Fields which are ſown with Spring Corn, there is rarely a Plant of it to be found, which ſhews the Neceſſity of ſowing the Seeds in Autumn; for thoſe Fields of Spring Corn, if ſuffered to remain undiſturbed after the Harveſt, will abound with this Plant the following Year. For ſome Years paſt great Quantities of the Flowers of this Plant have been brought to *London*, and ſold in the Streets by the Name of *Red Morocco*. Both theſe annual Sorts flower in the Beginning of *June*, and the Seeds ripen in *Auguſt* and *September*; this muſt be underſtood of thoſe Plants which ariſe from Seeds ſown in Autumn, or ſuch as have fallen to the Ground, for when any Plants come up from the Seeds ſown in the Spring (which ſometimes happen) they do not flower till *July* or *Auguſt*, and their Seeds ſeldom ripen before *October*.

Theſe Plants will thrive beſt in a light Soil, but may be ſown in any Situation, ſo that by ſowing ſome in a warm Situation, and others in the Shade, they may be continued longer in Flower. The Seeds ought to be ſown where the Plants are to remain to flower, for they do not bear tranſplanting well, and therefore they ſhould be ſown in ſmall Patches in the Borders of the Flower Garden, and when the Plants come up, they ſhould be thined, leaving five or ſix in each Patch, which will make a better Appearance than where they grow ſingle.

The 3d Sort hath a perennial Root, and an annual Stalk. This grows naturally on the Mountains of *Bohemia*, *Pruſſia*, and other Parts of *Germany*, but has been long cultivated in Gardens. It produces its Flowers the latter End of *March*, or the Beginning of *April*, according to the Forwardneſs of the Seaſon; the Stalks riſe about a Foot and a Half high, and when the Roots are large, and have ſtood unremoved for ſome Years, they will put out a great Number of Stalks from each Root; theſe are garniſhed with fine ſlender Leaves, placed in Cluſters at Intervals. At the Top of each Stalk, is one large yellow Flower, compoſed of an unequal Number of Petals, the Center of which is occupied by a great Number of Germen, ſurrounded by many Stamina; after the Flowers drop, the Germen become naked Seeds, cloſely adhering to the Foot Stalk, forming an obtuſe Spike. Theſe ripen in *Auguſt*, and ſhould be ſown ſoon after, otherwiſe they ſeldom ſucceed.

When the Plants come up they muſt be carefully kept clean from Weeds, and, in very dry Weather, if they are now and then refreſhed with Water, it will promote their Growth. They ſhould remain in the Place where they were ſown until the ſecond Year, for they make but ſlow Progreſs while young. The beſt Time to tranſplant them is in Autumn, and they ought to be planted where they are to remain, for if often removed they will not produce many Flowers, nor thoſe Flowers be ſo ſtrong as on the Plants which are unremoved. The Roots of this Plant are, by the *Germans*, uſed for the true Black Hellebore.

ADOXA, Tuberous Moſchatel, or Hollow Root.

The *Characters* are,

The Empalement of the Flower is bifid and permanent, upon which reſts the Germen; the Flower is of one Leaf, which is cut into four acute Segments, the Germen is ſituated in the Center, ſupporting four erect Styles, theſe are attended by eight Stamina, crowned by roundiſh Summits; after the Flower is paſt, the Germen becomes a round Berry, reſting on the Empalement, which hath four Cells, each containing a ſingle compreſſed Seed.

We know but one Species of this Genus, *viz.*

Adoxa. *Hort. Cliff.* 152. Bulbous Fumitory Hollow Root, or Tuberous Moſchatel.

This Plant grows naturally in ſhady Woods in divers Parts of *England*: I have gathered it on the Top of *Hampſtead-hill* among the Buſhes, near the Wood; it is a low Plant, ſeldom riſing more than four Inches high, the Leaves reſemble thoſe of the bulbous Fumitory, the Flower Stalk ariſes from the Root, upon the Top of which is placed four or five ſmall Flowers of an herbaceous Colour; theſe appear the Beginning of *April*, and the Berries ripen in *May*, ſoon after which the Leaves decay. There is little Beauty in this Plant, but as ſome are fond of collecting the ſeveral Kinds of Plants in their Gardens, which are not commonly found, ſo it is mentioned here. The Roots may be tranſplanted any time after the Leaves are decayed, till Winter; the Root is tuberous, and ſhaped ſomewhat like a Tooth. It muſt be planted in the Shade, under Shrubs, for if it be expoſed to the open Sun it will not thrive. The Leaves and Flowers ſmell like Muſk, from whence it has been called *Muſk-Crowfoot.*

ÆSCHYNOMENE, Baſtard Senſitive Plant.

The *Characters* are,

The Empalement of the Flower conſiſts of one Leaf, cut into two equal Segments, the upper being bifid, and the lower trifid; the Flower is of the Butterfly Kind, the Standard being large and heart-ſhaped; the two Wings are oval, and ſhorter than the Standard; the Keel is Moon-ſhaped and pointed. In the Bottom of the Flower is ſituated an oblong hairy Germen, ſupporting an arched Style, attended by ten Stamina, nine of which coaleſce, and the other is ſeparated from them; after the Flower is paſt, the Germen becomes a long, plane, jointed Pod, which ſeparates at the Joints, in each of which is lodged one kidney-ſhaped Seed.

The *Species* are,

1. Æschynomene *caule ſcabro leguminum articulis medio ſcabris. Lin. Sp. Plant.* 713. Baſtard Senſitive Plant with a rough Stalk, and a jointed Pod.

2. Æschynomene *caule hiſpido foliolis acuminatis, leguminum articulis ſuborbiculatis. Prod. Leyd.* 384. Baſtard Senſitive Plant with a prickly Stalk, pointed Leaves, and jointed Pods half rounded.

3. Æschynomene *caule lævi arboreo leguminum articulis ſemicordatis glabris. P. L.* Baſtard Senſitive Plant with a ſmooth tree-like Stalk, and ſmooth jointed Pods.

4. Æschynomene *leguminibus ſubæqualibus lævibus, L. S. P.* Baſtard Senſitive Plant with equal ſmooth Pods.

5. Æschynomene *caule lævi foliolis obtuſis glabris leguminum articulatis ſubmarginatis.* Baſtard Senſitive Plant with a ſmooth Stalk, obtuſe ſmooth Leaves, and jointed Pods, bordered on one Side.

They are all Natives of warm Countries, the Seeds of the 1ſt, 4th, and 5th Sorts, I have received from *Africa*, and thoſe of the 2d and 3d from *America.*

The 1ſt Sort riſes to the Height of four or five Feet, having a ſingle herbaceous Stalk, which is in ſome Parts rough; the Leaves come out on every Side at the Top, forming a ſort of Head; theſe are long, and compoſed of a great Number of ſmall Leaves (or Pinnæ) placed alternately, being between three and four Inches long, and a Quarter of an Inch broad, ſmooth, and of a glaucous Colour. The Flowers come out from between the Leaves, two or three together upon long Foot Stalks; theſe are yellow, and ſhaped like thoſe of Peaſe. After the Flower is paſt, the Germen becomes a flat jointed Pod, about four Inches long, which, when ripe, parts at the Joints, and in each Diviſion is lodged a ſingle kidney-ſhaped Seed.

The 2d Sort ſeldom riſes more than two Feet high, but ſends out three or four lateral Branches; theſe are clothed with narrow winged Leaves, whoſe Pinnæ are placed alternate on the Midrib, and are hairy, as is alſo the Stalk. The Flowers come out from the Wings of the Leaves upon branching Foot Stalks, five or ſix together, each having a ſhort Foot Stalk; theſe are much leſs than thoſe of the 1ſt Sort, and of a paler yellow Colour. After the Flowers are paſt, the Germen becomes a Pod, which is jointed, in ſome there are three, and in others five ſwelling Diviſions, in each of which is lodged a ſingle kidney-ſhaped Seed.

The 3d Sort grows to the Height of ſix or ſeven Feet, with a ſingle ſmooth Stem; the Leaves come out towards the Top of the Stalk, as in the 1ſt Sort, theſe are ſmooth, and compoſed of many Pinnæ, placed alternate on the Midrib; the Flowers come out from the Wings of the Leaves, two or three together, being of a Copper Colour, and as large as thoſe of the 1ſt Sort; after the Flowers are paſt, the Germen becomes a ſmooth jointed Pod, each Diviſion being half heart-ſhaped, and incloſing a ſingle kidney-ſhaped Seed.

The 4th Sort grows naturally in *Egypt*, and on the Coaſt of *Guinea*, whence I received the Seeds. This hath woody Stems and Branches, which are garniſhed with ſmooth Leaves, compoſed of many blunt Pinnæ, ſet by oppoſite Pairs; the Flowers come out from the Wings of the Leaves in long Spikes, which hang downward, of a deep yellow Colour, and ſmaller than thoſe of the former Sort. After the Flower is paſt, the Germen becomes a taper-pointed ſmooth Pod, not jointed.

The 5th Sort riſes about three Feet high, with a ſingle herbaceous Stalk, ſeldom putting out any ſide Branches. The Flowers come out from the Wings of the Leaves, ſometimes ſingle, and other Times two or three upon each Foot Stalk, theſe are ſmall, and of a pale yellow Colour; after the Flower is paſt, the Germen becomes a long falcated Pod, divided into eleven, or thirteen Partitions, each containing a ſingle kidney-ſhaped Seed.

The 1ſt, 3d, and 4th Sorts will live through the Winter in *England*, if placed in a warm Stove; but as their Stalks are ſucculent, ſo they muſt be kept dry in Winter, otherwiſe they are very ſubject to rot. They ſhould be plunged into the Tan Bed, for when put into a dry Stove, the Fibres of their Roots ſoon grow dry, and their Leaves hang and fade, which ſhews their Want of Moiſture, but when they have Water given them, it cauſes the tender fibres of their Roots to periſh, and the Plants ſoon after decay.

Theſe are all propagated by Seeds, which ſhould be ſown on a hot Bed early in the Spring, and when the Plants have Strength enough to be removed, they ſhould be put each into a ſeparate ſmall Pot, filled with light Earth, and plunged into a freſh hot Bed, to bring them forward; and as they advance in their Growth, they ſhould be ſhifted into large Pots, but great Care ſhould be taken not to over pot them, for if the Pots are too large, the Plants will not thrive. The 1ſt, 2d, and 5th Sorts are annual, therefore muſt be brought forward early in the Year, otherwiſe they will not perfect their Seeds; but the 3d and 4th Sorts may be preſerved through the Winter, and will flower early the following Summer, ſo that their Seeds will ripen in the Autumn. The other Sorts uſually flower in *July*, and their Seeds ripen in *October*.

ÆSCULUS. *Lin. Gen.* The Horſe Cheſtnut.

The *Characters* are,

The Empalement of the Flower is ſwelling, and conſiſts of one Leaf, ſlightly cut into five Segments; the Flower is compoſed of five roundiſh Petals, folded at their Border, and waved; theſe are narrow at their Baſe, where they are inſerted in the Empalement, but ſpread open above. In the Center is placed a roundiſh Germen, having a ſingle Style, crowned with a pointed Stigma, this is attended by ſeven Stamina, which extend to the Length of the Petals, and are declining, theſe are crowned with upright Summits. When the Flower is paſt, the Empalement becomes a thick, roundiſh echinated Capſule, opening into three Cells, in one or two of which are lodged globular Seeds.

We have but one *Species* of this Genus, *viz.*

ÆSCULUS *floribus heptandriis. Hort. Upſal* 92. The Common Horſe Cheſtnut.

We have two Varieties of this Tree, one with white blotched Leaves, and the other with yellow; but as theſe are accidental Variations, ſo I ſhall only mention them here, to inform thoſe who are ignorant: That they may be budded upon the common Sort, and if planted in poor Land, theſe variegated Leaves will abide, but when in good Ground, and the Trees grow vigorous, become plain again.

The Horſe Cheſtnut was brought from the Northern Parts of *Aſia* about the Year 1550, and was ſent to *Vienna* about the Year 1588.

This Tree was in much greater eſteem formerly than at preſent, for ſince it is become ſo very common, few Perſons regard it. What has occaſioned its being ſo ſeldom planted, is the Decay of the Leaves early in Summer; ſo that when they are growing in Gardens, their Leaves frequently begin to fall in *July*, and occaſion a Litter from that Time, until all the Leaves are fallen; but notwithſtanding this Inconvenience, the Tree has great Merit, for it affords a noble Shade in Summer; and during the Time of its flowering, there is no Tree has greater Beauty, for the Extremity of the Branches are terminated by fine Spikes of Flowers, ſo that every Part of the Tree ſeems covered with them; which are finely ſpotted with a Roſe Colour, and theſe being intermixed with the green Leaves make a Noble Appearance.

The former Method of planting theſe Trees in Avenues and ſtrait Lines, has alſo been in ſome Meaſure the occaſion of their preſent diſrepute, becauſe in ſuch Plantations great Part of their Beauty is loſt; for when their Branches are ſo far extended as to nearly meet, moſt of the Flowers which are produced are hid from Sight, and as the Trees grow larger, ſo their Branches will interfere with each other, and produce few Flowers; the Leaves will alſo decay much ſooner in cloſe Plantations than on ſingle Trees: Therefore the great Beauty of them is to ſtand ſingle at a Diſtance from all other Trees, upon Lawns of Graſs in Parks, where their Fruit will be of great Service to Deer, who are very fond of them. In ſuch Situations, when the Trees are grown to a good Size, there is not a finer Object than they will afford during their Seaſon of flowering which is in *May*, and when the Weather is moderate, they will continue in Beauty near a Month.

As this Tree is quick in its Growth, ſo in a few Years they will arrive to a Size large enough to afford a good Shade in Summer, as alſo to produce Plenty of Flowers. I have known Trees which were raiſed from Nuts, in twelve or fourteen Years, large enough to ſhade two or three Chairs under the Spread of their Branches, and have been covered with Flowers in the Seaſon, ſo that few Trees make greater Progreſs than theſe. But as their Wood is of little Value, ſo the Trees ſhould not be propagated in too great Plenty: A few therefore of them placed at proper Diſtances in Parks for Ornament is as many as ſhould be preſerved, the Wood not being fit even for burning, nor any other Uſe that I know of.

Theſe Trees are propagated by ſowing of the Nuts, the beſt Time for doing this is early in the Spring; but the Nuts ſhould be preſerved in Sand during the Winter, otherwiſe they are apt to grow mouldy and rot. They may indeed be planted in Autumn, but then they will be in Danger of rotting if the Winter ſhould prove very wet, as alſo of being removed by Vermin.

When the Nuts ſucceed, and have a proper Soil, the Plants will ſhoot near a Foot the firſt Summer; ſo that where they grow pretty cloſe together, it will be proper to tranſplant them the following Autumn, when they ought to be planted in Rows at three Feet Diſtance, and one Foot aſunder in the Rows: In this Nurſery they may remain two Years, by which Time they will be fit to plant where they are deſigned to be continued; for the younger theſe Trees are planted out, the larger they will grow. There are many who will object to their being planted out young in Parks, becauſe they will require a Fence to ſecure them againſt Cattle; this will alſo be neceſſary, whatever Size they are when planted; and if large, they muſt be well ſtaked to prevent their being diſplaced by ſtrong Winds, which is another Expence: But when we conſider how much faſter a young Tree will grow, than one removed at a greater Age, there can be no Excuſe for planting large Trees.

This Tree is not very nice in its Culture, for it requires little Care in the Management, and will thrive in moſt Soils and Situations, but in a ſandy Loam they make the greateſt Progreſs; and if the Soil be inclining to Moiſture, the Leaves will continue in Verdure much longer, than in very dry Ground.

When theſe Trees are tranſplanted, their Roots ſhould be preſerved as entire as poſſible, for they do not ſucceed well, when torn or cut; nor ſhould any of the Branches be ſhortened, for there is ſcarce any Tree, which will not bear Amputation better than this; ſo that when any Branches are by Accident broken, they ſhould be cut off cloſe to the Stem, that the Wound may heal over.

There is ſomething very ſingular in the Growth of theſe Trees, which is the whole Shoot being formed in leſs than three Weeks, after the Buds are opened; in which Time I have meaſured Shoots a Foot and a half long, with their Leaves fully expanded: And no ſooner are the Flowers fallen, than the Buds for the ſucceeding Year are formed, which continue ſwelling till Autumn: at which Time the folding Covers are ſpread over with a thick tenacious Juice, which ſerves as a Pigment to defend the tender Buds from the Froſt and Rain in Winter; but upon the firſt Return of Warmth in the Spring, this melts and runs off, whereby the Bud is at full Liberty to extend. And it is remarkable that this Pigment, never hardens ſo as to injure the tender Buds, which are always formed at the Extremity of the former Year's Shoot; a plain Direction not to ſhorten them, for by ſo doing, the future Shoots are entirely cut off.

In *Turkey* the Nuts of this Tree are ground, and mixed with the Provender for their Horſes, eſpecially thoſe which are troubled with Coughs, or are broken winded; in both which diſorders they are accounted very good. Deer are very fond of the Fruit, and at the Time of their ripening will keep much about the Trees, and greedily devour them as they fall.

There are ſome old Trees now ſtanding, which were planted ſingle, at a great Diſtance from any other; theſe are grown to a very large Size, and their Heads form a natural Parabola, and when their Flowers are in full Beauty, there is not any Tree yet known in *Europe*, which makes ſo fine an Appearance. I have meaſured ſome of theſe Trees, whoſe Branches have extended more than thirty Feet in Diameter, and their Heads have been ſo cloſe, as to afford a perfect Shade in the hotteſt Seaſons. Theſe were planted in 1679, as appears by ſome Writings which are in the Poſſeſſion of the Perſons, who have now the Property of the Land where they grow: So that although they are of quick Growth, yet they are not of ſhort Duration.

AGAVE. Common *American* Aloe.

The *Characters* are,

The Flower has no Empalement, is Funnel-ſhaped, and of one Leaf which is cut at the Brim into ſix equal Segments; the oblong Germen is ſituated below the Flower, upon which reſts the ſlender Style, which is extended a conſiderable Length beyond the Petals, and is crowned by a three cornered Stigma. This is attended by ſix erect Stamina of the ſame Length, crowned by narrow Summits; after the Flower is paſt, the Germen becomes an oblong three cornered Seed Veſſel, having three Cells, which are filled with flat Seeds.

The *Species* are.

1. Agave *foliis dentato-ſpinoſis ſcapo ramoſo.* The common great *American* Aloe, with a branching Stalk.

2. Agave *foliis dentato-ſpinoſis ſcapo ſimpliciſſimo. L. S. P.* 323. Great *American* Aloe with a ſimple Stalk.

3. Agave *foliis integerrimis. Gen. Nov: Lin. Sp. Pl.* 323. *American* Aloe with ſtiff whole Leaves.

4. Agave *radice tuberoſâ foliis longiſſimis marginibus ſpinoſis.* Smaller *American* Aloe with a tuberous Root and very long Leaves, with Spines on their Edges.

5. Agave *foliis lanceolatis reflexis, marginibus dentatis.* *American* Aloe with ſpear-ſhaped reflexed Leaves, whoſe Edges are indented.

6. Agave *foliis longis erectis lætè virentibus; marginibus fuſcis minimè ſerratis.* *American* Aloe with long deep green Leaves, edged with brown, and very ſlightly ſawed. This is called in *America* *Karatto.*

7. Agave *foliis oblongis marginibus ſpinoſiſſimis nigricantibus.* *American* Aloe with oblong Leaves, whoſe Edges are cloſely beſet with black Spines, commonly called Broad-leaved Aloe from *Vera Cruz.*

8. Agave *foliis lineari lanceolatis integerrimis rigidis aculeo terminatis.* Narrow-leaved Aloe from *Vera Cruz.*

The firſt Sort here mentioned has been long preſerved in the *Engliſh* Gardens, where of late Years there hath been ſeveral of the Plants in Flower. The Stems of this when the Plants are vigorous, generally riſe upward of twenty Feet high, and branch out on every Side, ſo as to form a kind of Pyramid: The ſlender Shoots being garniſhed with greeniſh yellow Flowers, which ſtand erect, and come out in thick Cluſters at every Joint. Theſe have ſix long Stamina, crowned with yellow Summits, and placed round the Style, which is alſo extended to the ſame Length as the Stamina. After the Flowers fall away, the Germen which is ſituated beneath the Flower, becomes an oblong triangular Veſſel, divided into three Cells, filled with compreſſed Seeds; but theſe do not come to Maturity in *England*.

When theſe Plants flower, they make a fine Appearance, and continue a long time in Beauty, if they are protected from the cold in Autumn, as there will be a Succeſſion of new Flowers produced, for near three Months, in favourable Seaſons. It has been generally believed, that this Plant doth not flower until it is a hundred Years old; but this is a great Miſtake, for the Time of its flowering depends on the Growth of the Plants; ſo that in hot Countries where they grow faſt, and expand many Leaves every Seaſon, they will flower in a few Years; but in colder Climates, where their Growth is ſlow it will be much longer before they ſhoot up their Stem. There is a Variety of this Sort with ſtriped Leaves, which is now pretty common in the *Engliſh* Gardens.

The Plants of the 2d Sort are ſo like thoſe of the 1ſt, as not to be diſtinguiſhed from them, but by good Judges. The principal Difference is, the Leaves of this are narrower toward their Extremity, and of a paler Colour: The Stems of this Sort do not riſe ſo high as the firſt, nor do they branch in the ſame Manner, but the Flowers are collected into a cloſe Head at the Top; they are however of the ſame Shape and Colour. There has been three or four Plants of this Sort, which have lately flowered in *England*; one of which was in the *Chelſea* Garden a few Years paſt. This Sort ſeldom puts out ſo many Offsets as the common Aloes.

The 7th Sort greatly reſembles theſe, ſo that many Perſons have ſuppoſed it to be the ſame. But the Leaves of this are much thinner, the Indentures on their Edges abundantly cloſer, and not ſo deep, as in either of the former; the Spines too are blacker. How this differs from the others in flower I know not, as none of their Flowers have been produced in *England*.

Theſe three Sorts are hardy. I have known Plants of the 1ſt Sort live in the open Air for ſome Years in mild Seaſons, but in ſevere Winters they are always killed, if not ſheltered in that Seaſon. They are propagated by Offsets, which the 1ſt Sort ſends out in Plenty, but the third ſeldom puts out any; ſo theſe may be increaſed by taking off ſome of the larger Roots, at the Time when the Plants are ſhifted; planting them in Pots filled with light ſandy Earth, they will ſhoot out and become good Plants, as I have often experienced. The 2d Sort generally puts out Suckers enough for Propagation, though not in ſo great Plenty as the 1ſt. All theſe ſhould be planted in Pots filled with light ſandy Earth, and houſed in Winter with Oranges, Myrtles, *&c.* and during that Seaſon, ſhould have but little Wet. In the Summer they muſt be placed abroad in the open Air, where they may remain till toward the End of *October*, when they ſhould be houſed again. The 7th Sort being a little tenderer than the other two, ſhould be put into the Green-houſe before them, and may ſtay there a little longer in the Spring.

The 3d Sort hath long narrow ſtiff Leaves, of a pale green Colour, not indented on their Edges, but frequently a little waved; the Side Leaves ſpread open, but thoſe in the Center fold cloſely over each other, and ſtrictly ſurround the Bud. The Plants of this Sort rarely grow more than three Feet high, but the Flower Stem riſes near twenty, and branches out much like that of the firſt, but more horizontally; the Flowers are of the ſame Shape, but ſmaller, and of a greener Colour: After the Flowers are paſt, inſtead of Seed Veſſels, young Plants ſucceed to every Flower, ſo that all the Branches are cloſely beſet with them. There was a Plant of this Kind which flowered in the *Chelſea* Garden 1755, the Stem of which begun to ſhoot the Beginning of *October*, and by the End of that Month was upward of ten Feet high, by the End of *November* it was near twenty, and the lower lateral Branches were upward of four Feet long, the others decreaſing gradually ſo as to form a regular Pyramid. In *December* the Stalks were cloſely garniſhed with Flowers, and in the Spring after the Flowers dropped off; they were ſucceeded by young Plants, which as they fell off and dropped into the Pots which ſtood near, put out Roots and became good Plants. This Sort never produces Offsets from the Root, ſo that it cannot be increaſed but when it flowers, at which Time there will be Plenty enough; the old Plant preſently after dies.

The 4th Sort hath Leaves ſomewhat like the 3d in Shape and Colour, but they are indented on their Edges, and each Indenture terminates in a Spine; the Root of this Sort is thick, and ſwells juſt above the Surface of the Ground; in other Reſpects it agrees with the former. This Sort hath not flowered in *England*, therefore I cannot tell how it differs in its Flowers from the other. I have raiſed this from Seeds which were ſent me from *America*, but the Plants never put out Suckers from the Roots, ſo that it can only be propagated by Seeds. Dr. *Linnæus* ſuppoſes it to be the ſame with the 3d Species, but whoever ſees the Plants, will not doubt of their being different.

The 5th Sort never grows to a large Size, the Leaves of it are ſeldom more than a Foot and a Half long, and about two Inches and a Half broad at their Baſe; theſe end in a ſlender Spine, being ſlightly indented on their Edges; they are alſo reflexed backward toward their Extremity, and are of a dark green Colour. The Flower Stem riſes about twelve Feet high, and branches out toward the Top in the ſame Manner as the 3d Sort; the Flowers are nearly of the ſame Size and Colour as thoſe of the 3d, and after they fall off, are ſucceeded by young Plants in the ſame Manner. A Plant of this Kind flowered in the Garden at *Chelſea*, in *December* 1754. This never produces any Suckers from the Root, ſo cannot be increaſed until it flowers.

The Leaves of the 6th Sort, are from two Feet and a Half to three Feet long, and about three Inches broad, being of a dark green Colour ending in a black Spine; the Borders of the Leaves are of a browniſh red Colour, and ſlightly ſerrated. Theſe ſtand more erect than in the other Species; but as this Sort hath not flowered in *England*, ſo I cannot ſay how it differs from the other. The Plants of it were ſent me from *St. Chriſtophers* by the Title of *Koratto*, which I ſuppoſe is given indifferently to other Species of this Genus; for I have frequently heard the Inhabitants of *America* call the common great Aloe by the ſame Name.

The 8th Sort hath long narrow ſtiff Leaves, which are entire, and are terminated by a ſtiff black Spine. Theſe Leaves are ſeldom more than two Feet long, and little more than an Inch broad, being of a glaucous Colour: The Side Leaves ſtand almoſt horizontally, but the center Leaves are folded over each other, and incloſe the Flower-bud; it never puts out Suckers: I have not ſeen any Plants of this Kind in Flower, although there are many of them in the *Engliſh* Gardens, of a conſiderable Age.

The 3d, 4th, 5th, 6th, and 8th Sorts, are much tenderer than the others, ſo cannot be preſerved through the Winter in *England*, unleſs in a warm Stove; nor will they thrive if ſet abroad in Summer, therefore they ſhould conſtantly remain in the Stove, obſerving to let them enjoy a great Share of free Air in warm Weather. They require a light ſandy Earth, and very little Wet in Winter; but in warm Weather, may be gently watered twice a Week, which is as often as is neceſſary; for much Water rots their Roots, and then their Leaves will decay and Inſects infect them. They ſhould be ſhifted every Summer into freſh Earth, but muſt not be put into large Pots, for unleſs their Roots are confined, the Plants will not thrive.

AGERATUM, Baſtard Hemp Agrimony.

The *Characters* are,

The Flowers are included in one common oblong Empalement, which is compoſed of many Scales. Theſe are uniform, tubulous, and hermaphrodite, and little longer than the Empalement, each being cut at their Margin into five Segments, which ſpread open. Every one of theſe has five ſlender Stamina, crowned with cylindrical Summits: In the Center of the Flower is ſituated an oblong Germen ſupporting a ſlender Style crowned by two fine Stygmas; the Germen afterwards becomes an oblong angular Seed, crowned with its proper little Cup, cut into five narrow Segments, which ſpread open. The Receptacle of the Seed is ſmall, naked, and convex.

The *Species* are,

1. AGERATUM *foliis ovatis caule piloſo.* Baſtard Hemp Agrimony, with oval Leaves and a hairy Stalk.

2. AGERATUM *foliis oppoſitis petiolatis crenatis, caule hirſuto.* Baſtard Hemp Agrimony, with Leaves having long Foot Stalks placed oppoſite, whoſe Edges are bluntly indented, and a hairy Stalk.

3. AGERATUM *foliis ovato cordatis rugoſis floralibus alternis, caule glabro. Lin. Sp. Pl.* Baſtard Hemp Agrimony, with rough oval Heart-ſhaped Leaves, Flower Branches growing alternate, and a ſmooth Stalk.

The two 1ſt are annual Plants; the Seeds of theſe muſt be ſown on a hot Bed in the Spring, and when the Plants are come up and are ſtrong enough to remove, they ſhould be tranſplanted into another moderate hot Bed, obſerving to water and ſhade them until they have taken Root; after which Time, they muſt have a good Share of Air in warm Weather, otherwiſe they will grow up very weak. In *June* they ſhould be inured to bear the open Air, toward the Middle of which Month, they may be tranſplanted into the full Ground, where they will begin to flower in *July*, and continue flowering till the Froſts in Autumn deſtroy them. The Seeds ripen in *September* and *October*, and when any of them ſcatter upon the Ground, and the ſame Earth happens to be put on a hot Bed the following Spring, the Plants will come up in great Plenty, as they frequently do in the open Air; but theſe Plants will be too late to produce good Seeds, unleſs the Summer proves warm. The 1ſt Sort grows naturally in *Africa*, and alſo in the Iſlands of *America*; for in Tubs of Earth which I received with Plants from *Jamaica*, *Barbadoes*, and *Antigua*, I have had Plenty of the Plants ariſe, from Seeds which were ſcattered on the Ground. The 2d Sort was found growing naturally at *La Vera Cruz*, by the late Dr. *William Houſtoun*, who ſent the Seeds to *Europe*, which have ſo well ſucceeded in many Gardens, as to become a Weed in the hot Beds. There is a Variety of this with white Flowers, which ariſes from the ſame Seeds.

The 3d Sort grows naturally in *North America*, but has been many Years an Inhabitant of the *Engliſh* Gardens. This hath a perennial Root and an annual Stalk, which dies in Winter, but the Roots put out freſh Stalks in Spring. They will grow near five Feet high, and toward their Tops put out Side Branches, which are placed oppoſite, as are the Leaves, which are ſhaped like a Heart. At the Ends of the Shoots, the Flowers are produced in large Tufts, which are of a pure white; theſe appearing in *October* at a Seaſon when there is a Scarcity of other Flowers, renders it more valuable.

This Sort is propagated by Seeds, as alſo by parting the Roots; the latter Method is commonly practiſed in *England*, becauſe there are few Autumns ſo favourable as to ripen the Seeds: But the Seeds are frequently brought from *North America*, where this Plant is very common; for being light, they are eaſily wafted about to a great Diſtance, where they come to Maturity; ſo that where there are any Plants growing, all the adjoining Land is filled with the Seeds of them.

The beſt Time for parting and tranſplanting the Roots of this Plant, is in Autumn, ſoon after their Stalks decay, that they may have good Root before the drying Winds in Spring come on, otherwiſe they will not flower ſtrong, or make a good Increaſe. The Roots ſhould be allowed three Feet Room every Way, for as they ſpread and increaſe very much at Root, ſo when they are cramped for Room, the Plants ſtarve, and in dry Seaſons their Leaves will hang as if they were dead. They delight in a rich moiſt Soil and open Situation, where they will produce many Stalks from each Root, which will grow ſo large as to form a conſiderable Buſh. This Plant will bear the ſevereſt Cold in this Country.

AGERATUM, *or* MAUDLIN. *See* Achillea.

AGERATUM PURPUREUM. *See* Erinus.

AGNUS CASTUS. *See* Vitex.

AGRIFOLIUM. *See* Ilex.

AGRIMONIA. *Lin. Gen. Plant.* 534. Agrimony.

The *Characters* are,

The Empalement of the Flower is of one Leaf, which is cut into five acute Segments, and reſts on the Germen; the Flower has five Petals, which are plain and indented at their Extremity, and are narrow at their Baſe, where they are inſerted in the Empalement. In the Center ariſes a double Style reſting on the Germen, which is attended by twelve ſlender Stamina which are crowned with double compreſſed Summits. After the Flower is paſt, the Germen becomes two roundiſh Seeds faſtened to the Empalement.

The *Species* are,

1. AGRIMONIA *foliis pinnatis hirſutis, foliolis oblongo ovatis dentatis.* The common Agrimony.

2. AGRIMONIA *foliis pinnatis, foliolis obtuſis dentatis.* The white Agrimony.

3. AGRIMONIA *altiſſima, foliis pinnatis foliolis oblongis acutis ſerratis.* The ſweet ſcented Agrimony.

4. AGRIMONIA *foliis pinnatis, foliolis anguſtis acutè ſerratis, radice craſſiſſimâ.* Eaſtern Agrimony with narrow pinnated Leaves ſharply ſerrated, and a thick Root.

5. AGRIMONIA *foliis caulinis ternatis fructibus glabris. H. C.* Three leaved Agrimony with ſmooth Fruit.

The 1ſt Sort grows naturally in ſeveral Parts of *England*, by the Sides of Hedges, and in Woods. This is the Sort which is commonly uſed in Medicine, and is brought to the Markets by thoſe who gather Herbs in the Fields. Dr. *Linnæus* has joined the 3d and 4th Sorts to this, ſuppoſing them to be one Species; but from thirty Years Experience, I could never obſerve either of them to alter when raiſed from Seeds, but have conſtantly found the Seeds to produce the ſame Kind as the Parent Plants, they may therefore ſafely be accounted different Species.

The 2d Sort is the ſmalleſt of all the Species; the Leaves of this have not ſo many Pinnæ as the common Sort, and the Pinnæ are rounder, and the Indentures on their Edges blunter. The Spike of Flowers is ſlender, and the Flowers ſmaller and of a dirty white Colour. This Sort grows naturally in *Italy* from whence I received the Seeds, and have never found them vary.

The 3d Sort grows near four Feet high, the Leaves of this have more Pinnæ than either of the other, and they are longer and narrower, ending in acute Points; the Serratures of the Leaves are ſharper than any of the other, and when handled emit an agreeable Odour.

There is another Sort mentioned by many Writers on Botany, titled *Agrimonia Santonenſis adorata*, the Seeds of which I have received from ſeveral Profeſſors of Botany abroad; but the Plants which were produced from them always proved the ſame as the 3d Sort, ſo that I doubt of its being a different Species; if there be however any Difference between them, the Seeds which were ſent me were not right. The Leaves of this Sort make an agreeable cooling Tea, which is a very good Beverage for Perſons in a Fever, in which Diſorder I have known it often preſcribed by a good Phyſician.

The 4th Sort is of humble Growth, ſeldom riſing above two Feet high; the Pinnæ of its Leaves are longer and narrower than either of the former, and the Spikes of Flowers very ſhort and thick. The Roots of this are very thick, and ſpread widely under Ground, by which it multiplies faſter than either of the other; the Seeds are alſo much larger and rougher, than thoſe of the common Sort. This was found growing in the *Levant* by Dr. *Tournefort*, who ſent the Seeds to the Royal Garden at *Paris*, where they ſucceeded, and from thence the other Botanic Gardens have been ſupplied with them.

The 5th Sort greatly reſembles the other in the Shape of its Pinnæ (or ſmaller Leaves) but there are only three on each Foot Stalk; the Flower of this hath a double Empalement, the outer one being fringed; there are but ſeven or eight Stamina in each Flower, and the Seeds are ſmooth, for which Reaſon *Fabius Columna* and other Writers on Botany, have ſeparated it from the Agrimony, making it a diſtinct Genus.

All theſe Sorts are hardy perennial Plants, which will thrive in almoſt any Soil or Situation, and require no other Care but to keep them clean from Weeds. They may be propagated by parting of their Roots, which ſhould be done in Autumn, when their Leaves begin to decay, that the Plants may be well eſtabliſhed before the Spring. They ſhould not be planted nearer than two Feet, that their Roots may have Room to ſpread. They may alſo be propagated by Seeds, which ſhould be ſown in Autumn, for if they are kept out of the Ground till Spring, they ſeldom come up the ſame Seaſon.

AGROSTEMMA. Wild Lychnis or Campion.

The *Characters* are,

The Empalement of the Flower is permanent, of one Leaf, which is tubulous, thick, and cut into five narrow Segments at the Edge; the Flower is compoſed of five Petals, which are narrow at the Baſe where they are inſerted in the Empalement, but ſpread open at the Top. In the Center is ſituated an oval Germen ſupporting five Styles, which are ſlender, erect, and crowned with ſimple Stigma; theſe are attended by ten Stamina, five of which are inſerted in the Baſe of the Petals, and the others ſtand alternately between; after the Flower is paſt, the Germen becomes an oval oblong Capſule having one Cell opening into five Diviſions, which is filled with angular Seeds.

The *Species* are,

1. AGROSTEMMA *hirſuta calycibus corollam æquantibus petalis integris nudis. L. S. P.* Hairy wild Lychnis, whoſe Empalement is equal with the Corolla, and the Petals entire and naked, commonly called *Corn Campion.*

2. AGROSTEMMA *glabra foliis lineari-lanceolatis petalis emarginatis coronatis. Hort. Upſal.* 115. Smooth wild Campion with narrow Spear-ſhaped Leaves, and the Petals of the Flowers indented at their Brim.

3. AGROSTEMMA *tomentoſa foliis ovato-lanceolatis, petalis integris coronatis. H. U.* Single Roſe Campion.

4. AGROSTEMMA *tomentoſa foliis ovato-lanceolatis flore pleno.* The double Roſe Campion.

5. AGROSTEMMA *tomentoſa petalis emarginatis. Lin. Sp. Plant.* 436. The umbelliferous Mountain Campion.

The 1ſt Sort grows naturally in the Corn Fields in moſt Parts of *England*, ſo is ſeldom admitted into Gardens. The ſecond Sort grows naturally in *Sicily*, and being a Plant of little Beauty, is only preſerved in Botanic Gardens, for the ſake of Variety.

The ſingle Roſe Campion has been long an Inhabitant of the *Engliſh* Gardens, where, by its Seeds having ſcattered, it is become a kind of Weed. There are three Varieties of this Plant, one with deep red, another with fleſh-coloured, and a third with white Flowers, but theſe are of ſmall Eſteem; for the double Roſe Campion being a finer Flower, has turned the others out of moſt fine Gardens. The ſingle Sorts propagate faſt enough by the Seeds, where they are permitted to ſcatter, for the Plants come up better from ſelf-ſown Seeds, than when they are ſown by Hand, eſpecially if they are not ſown in Autumn.

The Sort with double Flowers never produces any Seeds, ſo is only propagated by parting of the Roots; the beſt Time for this is in Autumn, after their Flowers are paſt, in doing of this, every Head which can be ſlipped off with Roots ſhould be parted; theſe ſhould be planted in a Border of freſh undunged Earth, at the Diſtance of ſix Inches, obſerving to water them gently until they have taken Root, after which they will require no more, for much Wet is very injurious to them, as is alſo Dung. In this Border they may remain till Spring, when they are to be planted into the Borders of the Flower Garden, where their Flowers are very ornamental in *July* and *Auguſt*. This was accidentally obtained from Seeds of the ſingle Sort.

The 5th Sort grows naturally upon the *Helvetian* Mountains, this is a low Plant, with woolly Leaves, the Flower Stem riſes near a Foot high; the Flowers grow in Umbels on the Top of the Stalk, which are of a bright red Colour. This flowers in *June*, and the Seeds ripen in *September*; it muſt have a ſhady Situation, and will thrive beſt in a moiſt Soil.

AIZOON.

This name has been by ſome Writers applied to the Houſe Leek, and alſo the Aloes; but Dr. *Linnæus* has given it to a Plant near of Kin to the *Ficoides*, which has been called *Ficoidea*, by ſome modern Botaniſts.

The *Characters* are,

It hath a permanent Empalement of one Leaf, which is cut into five acute Segments at the Top: There are no Petals in the Flower, but the five cornered Germen reſts on the Empalement, ſupporting five Styles, which are crowned with ſimple Stigma; theſe are attended by many hairy Stamina, which are inſerted into the Empalement, and are crowned with ſimple Summits. The Germen afterward becomes a ſwelling five cornered Capſule, having five Cells, in which are lodged many roundiſh Seeds.

The *Species* are,

1. Aizoon *foliis cuneiformi-ovatis floribus ſeſſilibus. Hort. Upſal.* 127. Sempervive with oval Wedge-ſhaped Leaves, and Flowers without Foot Stalks.

2. Aizoon *foliis lanceolatis floribus ſeſſilibus. Lin. Sp. Plant.* 488. Sempervive with Spear-ſhaped Leaves and Flowers, having no Foot Stalks.

3. Aizoon *foliis lanceolatis floribus paniculatis. Lin. Sp. Pl.* 448. Sempervive with Spear-ſhaped Leaves and Flowers growing in Panicles.

As we have no *Engliſh* Names for theſe Plants, ſo I have adopted this of *Sempervive*, which hath been applied to the *Aloe* and *Sedum*, both which have been alſo titled *Aizoon* and *Sempervivum*.

The 1ſt Sort is a Native of the *Canary Iſlands*: This is an annual Plant, which muſt be raiſed on a moderate hot Bed in the Spring; and when the Plants are fit to tranſplant, they ſhould be carefully taken up, and planted each into a ſmall Pot filled with freſh light Earth, and plunged into another moderate hot Bed, obſerving to ſhade them from the Sun until they have taken freſh Root; after which they muſt be hardened by Degrees to bear the open Air, into which they ſhould be removed in *June*, placing them in a ſheltered Situation, where they will flower, and ripen their Seeds in *September*, ſoon after which the Plants will periſh.

The 2d Sort grows naturally in *Spain*; this is alſo an annual Plant, whoſe Branches trail on the Ground; the Flowers have no Beauty, ſo theſe Plants are only preſerved by thoſe who are curious in collecting rare Plants for the Sake of Variety.

The 3d Sort grows naturally at the *Cape of Good Hope*, from whence the Seeds were brought to *Europe*. This is alſo of humble Growth, and periſhes ſoon after the Seeds are ripe.

Theſe may be propagated in the ſame Manner as the firſt, and when the Plants have acquired Strength, they may be planted in the full Ground; they require a poor ſandy Soil, for in rich Ground they grow very luxuriant in Branches, but do not flower till late in the Seaſon, ſo rarely perfect their Seeds; when they are planted in dry Sand, or Lime Rubbiſh, they are more productive of Flowers, and leſs vigorous in their Branches.

ALATERNOIDES. See *Phylica*, *Clutia*, *Ceanothus*.

ALATERNUS, Ever-green Privet.

The *Characters* are,

It hath male and female Flowers in different Plants in ſome Species, and in others both Sorts of Flowers on the ſame. The male Flowers are compoſed of an Empalement of one Leaf, which is Funnel-ſhaped, and cut into five Segments at the Brim; to the Sides of the Empalement are fixed five ſmall Petals; at the Baſe of theſe Petals are faſtened ſo many Stamina, which are crowned with round Summits. The female Flowers have a great Reſemblance to the Male, but have no Stamina; in the Center is placed the Germen, ſupporting a trifid Style crowned by round Stigma, the Germen afterward becomes a ſoft round Berry, containing three Seeds.

The *Species* are,

1. Alaternus *foliis ovatis marginibus crenatis glabris*. The common *Alaternus*, with ſmooth Leaves indented on their Edges.

2. Alaternus *foliis ſubcordatis ſerratis glabris. Alaternus* with Heart-ſhaped ſmooth Leaves, which are ſawed on their Edges.

3. Alaternus *foliis lanceolatis profundè ſerratis glabris. Alaternus* with ſmooth Spear-ſhaped Leaves, which are deeply ſawed.

4. Alaternus *foliis ovato-lanceolatis integerrimis glabris. Alaternus* with ſmooth oval Spear-ſhaped Leaves which are entire.

The Varieties of theſe Plants are, the 1ſt Sort with variegated Leaves, which is commonly called *Blotched Phillyrea* by the Nurſery Gardeners. And the 3d Sort with Leaves ſtriped with White, and another with Yellow; theſe are known by the Silver and Gold ſtriped *Alaternus*: But as theſe are accidental Varieties, ſo I have omitted placing them among the Number of Species.

The common Diſtinction of this Genus from the *Phillyrea*, is in the Poſition of their Leaves, which in the Plants of this are placed alternately on the Branches, whereas thoſe of *Phillyrea* are placed by Pairs oppoſite; this is obvious at all Seaſons, but there are more eſſential Differences in their Characters, as will be explained under the article *Phillyrea*.

The 1ſt Sort has been long cultivated in the *Engliſh* Gardens, but the plain Sort is now uncommon; for the blotched-leaved Sort has been generally cultivated in the Nurſeries, and the other almoſt totally neglected.

Theſe Plants were much more in Requeſt formerly than they are at preſent, when they were planted againſt Walls in Court Yards to cover them, as alſo to form ever-green Hedges in Gardens, for which Purpoſe theſe were very improper; for their Branches ſhoot very vigorouſly, and being very pliant, they are frequently diſplaced by the Wind; and in Winter, when much Snow falls in ſtill Weather, the Weight of that which lodges on the Hedges, frequently breaks them down: Add to this the Trouble of keeping them in Order, which cannot be effected with leſs than three Times clipping in a Seaſon; which is not only expenſive, but alſo occaſions a great Litter in a Garden: Theſe Inconveniencies have juſtly brought theſe Hedges into Diſeſteem.

The 3d Sort with Silver-ſtriped Leaves, was alſo in great Requeſt ſome Years ago, for planting againſt Out-houſes, and other Buildings, to hide the Brick-work; but as theſe required to be often clipped, and their Branches frequently wanting to be faſtened up to the Wall, which was troubleſome and expenſive; and this Sort of Wall Hedges, being great Harbour for Vermin, ſo of late there has been but little Demand for theſe Plants. The Sort with Gold-ſtriped Leaves is pretty rare in the *Engliſh* Gardens, and is not ſo hardy as that with Silver Stripes, ſo that in ſevere Winters they are often killed. But the Taſte for theſe variegated Plants is almoſt loſt in *England*, there being few Perſons now, who do not prefer the plain green Leaves to thoſe which are ſtriped.

The 2d Sort which grows naturally about *Turin*, was formerly in the *Engliſh* Gardens, in much greater Plenty than at preſent. This was generally called *Celaſtrus*, or Staff Tree; the Leaves of this Sort are placed at greater Diſtances than thoſe of the firſt; ſo that their Branches appear thinly covered with them, which may have occaſioned their being diſeſteemed. The Leaves of this are ſhorter than thoſe of the firſt Sort, and are rounded at their Foot Stalks like a Heart-ſhaped Leaf, the Edges are alſo ſawed.

The 3d Sort has been an old Inhabitant in ſome Gardens, but was not much propagated till of late Years; the Leaves of this are longer and narrower than thoſe of either of the other Sorts, and the Serratures on their Edges are much deeper; this ſhoots its Branches more erect, and forms an handſomer Buſh than any of the other, and is equally hardy, ſo may be allowed to have a Place in all Plantations of Ever-greens. This grows naturally in the South of *France*, where the Berries are gathered, and ſold by the Name of *Avignon* Berries, for the Uſe of Painters, &c. for making a yellow Pigment.

Theſe Sorts are by ſome ſuppoſed to be only Varieties and not diſtinct Species; but from many repeated Trials, in raiſing them from Seeds, I can affirm they do not vary, the Seeds conſtantly producing the ſame Species as they were taken from.

All theſe Sorts are eaſily propagated by laying their Branches down, as is practiſed for many other Trees. The beſt Time for this is in the Autumn, and if properly performed, the Layers will have made good Roots by the Autumn following, when they may be cut off from the old Stock, and planted either into the Nurſery, or in the Places where they are deſigned to remain. When they are planted in a Nurſery, they ſhould not remain there longer than a Year or two; for as they ſhoot their Roots to a great Diſtance on every Side, ſo they cannot be removed after two Years Growth, without cutting off great Part of them, which is very hurtful to the Plants, and will greatly retard their Growth, if they ſurvive their Removal; but they are frequently killed by tranſplanting, when they have ſtood long in a Place. They may be tranſplanted either in the Autumn or the Spring, but in dry Land the Autumn Planting is beſt, whereas in moiſt Ground the Spring is to be preferred.

The plain Sorts may be propagated by ſowing their Berries, which they produce in great Plenty, but the Birds are greedy Devourers of them when they begin to ripen. The Plants raiſed from Seeds, always grow more erect than thoſe propagated by Layers, ſo are fitter for large Plantations, as they may be trained up to Stems, and form ed more like Trees; whereas the Layers are apt to extend their lower Branches, which retards their upright Growth, and renders them more like Shrubs. They will grow to the Height of eighteen or twenty Feet, if their upright Shoots are encouraged; but to keep their Heads from being broken by Wind or Snow, thoſe Branches which ſhoot irregular ſhould be ſhortened, which will cauſe their Heads to be cloſer, and not in ſo much Danger.

All the Sorts thrive beſt in a dry gravelly or ſandy Soil, for in rich Ground they are often injured by Froſt, when the Winters are ſevere, but in rocky dry Land they are ſeldom injured: And if in very hard Froſt their Leaves are killed, yet the Branches will remain unhurt, and will put out new Leaves in the ſpring.

ALCEA, *Lin. Gen.* 750. The Hollyhock.

The *Characters* are,

The Flower hath a double Empalement, of which one is permanent. The outer one is ſpread open, and cut at the Top into ſix Segments, the inner is larger and ſlightly cut into five. The Flower is compoſed of five Petals, which coaleſce at their Baſe, and ſpread open at the Top in Form of a Roſe. In the Center is placed the round Germen, ſupporting a ſhort cylindrical Style, crowned with numerous Stigma, which is attended by many Stamina joined below to the pentagonal Column, and ſpread open at Top; theſe are crowned with Kidney-ſhaped Summits: After the Flower is paſt, the Germen becomes a round, depreſſed, articulated Capſule, having many Cells, in each of which is lodged one compreſſed Kidney-ſhaped Seed.

The *Species* are,

1. ALCEA *foliis ſinuatis angulofis. Hort. Cliff.* 348. Hollyhock with angular ſinuated Leaves.

2. ALCEA *foliis palmatis. H. C.* Hollyhock with handed Leaves. This is the *Malva roſea folio ficus. C. B. P.*

Theſe are diſtinct Species, whoſe Difference in the Form of their Leaves always continues. The Leaves of the 1ſt Sort are roundiſh, and cut at their Extremity into Angles; but thoſe of the 2d are deeply cut into ſix or ſeven Segments, ſo as to reſemble a Hand.

The various Colours of their Flowers being accidental, as alſo the double Flowers being only Varieties which have riſen from Culture, are not by Botaniſts deemed diſtinct Species, ſo I have not enumerated them here, therefore ſhall only mention the various Colours, which are commonly obſerved in their Flowers; which are white, pale red, deep red, blackiſh red, purple, yellow, and fleſh Colour. Beſides theſe, I many Years ago ſaw ſome Plants with variegated Flowers, in the Garden of the late Lord *Burlington*, in *London*, raiſed from Seeds which came from *China*.

Although theſe Varieties of double Hollyhocks are not conſtant, yet where their Seeds are carefully ſaved from the moſt double Flowers, the greateſt Number of the Plants will ariſe nearly the ſame, as the Plants from which they were taken, both as to their Colour and the Fulneſs of their Flowers; provided no Plants with ſingle or bad coloured Flowers are permitted to grow near them. Therefore ſo ſoon as any ſuch appear, they ſhould be removed from the good ones, that their Farina may not ſpread into the other Flowers, which would cauſe them to degenerate.

The 1ſt Species grows naturally in *China*, from whence I have often received the Seeds: The 2d Sort I have received from *Iſtria*, where it was gathered in the Fields; but theſe Seeds produced ſingle red Flowers only, whereas from ſome Seeds of this Sort which were given me by the late *Charles Du Bois*, Eſq; of *Mitcham*, in 1726, which he procured from *Madraſs*, I raiſed many double Flowers of ſeveral Colours.

Theſe Plants, although Natives of warm Countries, yet are hardy enough to thrive in the open Air in *England*, and have for many Years been ſome of the greateſt Ornaments in the Gardens, toward the latter Part of Summer: But ſince they have become very common, have not been ſo much regarded as they deſerve; partly from their growing too large for ſmall Gardens, and their requiring tall Stakes to ſecure them from being broken by ſtrong Winds. But in large Gardens, where they are properly diſpoſed, they make a fine Appearance; for as their Spikes of Flowers grow very tall, ſo there will be a Succeſſion of them on the ſame Stems, more than two Months; the Flowers on the lower Part of the Spike, appearing in *July*, and as their Stalks advance, ſo new Flowers are produced till near the End of *September*. When the Plants are planted in good Ground, their Stalks often riſe to the Height of eight or nine Feet, ſo that near ſix Feet of each will be garniſhed with Flowers; which when double, and good Colours, make a fine Appearance, if the various Colours are properly intermixed.

They are propagated by Seeds, which, as hath been already obſerved, ſhould be carefully ſaved from thoſe Plants whoſe Flowers are the moſt double, and of the beſt Colours. If theſe are preſerved in their Capſules until Spring, the Seeds will be better, provided they are gathered very dry, and Care be taken that no Damp comes to them in Winter, which will cauſe their Covers to be mouldy, and thereby ſpoil the Seeds.

The Seeds ſhould be ſown on a Bed of light Earth, about the Middle of *April*, which muſt be covered about half an Inch deep, with the ſame light Earth; ſome Perſons ſow them in ſhallow Drills, and others ſcatter the Seeds thinly over the whole Bed. When they are ſown in the former Method, the Plants generally come up thick, ſo will require to be tranſplanted ſooner than thoſe which are ſown in the latter. By the 1ſt, the Seeds may be more equally covered, and kept clean with leſs Trouble, becauſe the Ground between the Drills may be hoed. When the Plants have put out ſix or eight Leaves, they ſhould be tranſplanted into Nurſery Beds, at a Foot Diſtance from each other, obſerving to water them until they have taken good Root; after which they will require no farther Care, but to keep them clean from Weeds till *October*, when they ſhould be tranſplanted where they are to remain.

Some Perſons let their Plants remain a Year longer in the Nurſery Beds to ſee their Flowers, before they remove them to the Flower Garden; but when this is intended, the Plants ſhould be planted at a greater Diſtance in the Nurſery Beds, otherwiſe they will not have Room to grow. However, I have always choſen to remove my Plants the firſt Autumn, for young Plants more ſurely grow, than thoſe which are older, and if the Seeds are carefully ſaved, there will not be one in ten of the Plants come ſingle or of bad Colours.

ALCHEMILLA. Ladies Mantle.

The *Characters* are,

The Flower hath a permanent Empalement of one Leaf, which is ſpread open at the Brim, and cut into eight Segments. There are no Petals to the Flower, but the Center of the Empalement is occupied by the oval Germen, into which is inſerted a long Style, crowned with a globular Stigma: This is attended by four erect Stamina reſting on the Brim of the Empalement, and crowned with roundiſh Summits; the Germen afterwards turns to a ſingle compreſſed Seed.

The *Species* are,

1. ALCHEMILLA *foliis lobatis ſerratis, ſegmentis involucro acuto.* The common Ladies Mantle.
2. ALCHEMILLA *foliis lobatis ſericeis acutè ſerratis, ſegmentis involucro ſubrotundis.* Smaller ſilvery Ladies Mantle with lobated Leaves ſharply ſerrated, and the Segments of the Involucrum cut into roundiſh Segments.
3. ALCHEMILLA *foliis digitatis ſerratis. Flor. Lapp.* 61. Silvery Alpine Ladies Mantle with handed Leaves.
4. ALCHEMILLA *foliis quinatis multifidis glabris. Lin. Sp. Pl.* 123. Smooth five leaved Ladies Mantle, cut into many Segments.

The 1ſt Sort grows naturally in moiſt Meadows in ſeveral Parts of *England*, but is not very common near *London*: The Roots are compoſed of many thick Fibres, which ſpread greatly when they are in a proper Soil; the Leaves riſe immediately from the Root, ſuſtained by long Foot Stalks; theſe are roundiſh, and ſcalloped round the Borders, having ſeven or eight Lobes, and is ſhaped ſomewhat like the Ladies ſcalloped Mantles, from whence it had its Name. The Flower Stems ariſe between the Leaves about a Foot high, which divide into many Branches, and are at each Joint garniſhed with one ſmall Leaf, ſhaped like thoſe below; the Flowers are compoſed of an herbaceous Empalement, in the Center of which is the Style attended by four Stamina, crowned with yellow Summits; ſo that the only Beauty of this Plant is in the Leaves, which are uſed in Medicine, and are eſteemed to be vulnerary, drying and binding, and of great Force to ſtop inward Bleeding.

The 2d Sort is much ſmaller than the 1ſt, and the Leaves are much whiter and appear ſilky; the Flower Stems do not branch out ſo much, nor are the Flowers produced in ſo large Cluſters: Their Empalement is broader, and the Segments more obtuſe.

The 3d Sort grows naturally on the Mountains in *Yorkſhire*, *Weſtmoreland*, and *Cumberland*, generally upon moiſt boggy Places. It is alſo a Native of *Sweden* and *Denmark*, the *Alps*, and other cold Parts of *Europe*, and is admitted into Gardens for the Sake of Variety. The Leaves of this Sort are very white, and deeply cut into five Parts like a Hand; the Flower Stems ſeldom riſe more than ſix Inches high, nor do the Flowers make a better Appearance than the other Sorts.

The 4th Sort grows naturally in *Sweden, Lapland,* and other cold Countries, ſo is only to be found in ſome few curious Botanic Gardens in this Country. Theſe are all abiding Plants, which have perennial Roots and annual Stalks which periſh in Autumn. They may be propagated by parting their Roots; the beſt Time for which is in Autumn, that their Roots may be eſtabliſhed before the drying Winds of the Spring come on. They ſhould have a moiſt Soil and a ſhady Situation, otherwiſe they will not thrive in the Southern Parts of *England.* When they are propagated by Seeds, they ſhould be ſown in Autumn; for when they are ſown in Spring they ſeldom grow the firſt Year. They ſhould be ſown on a ſhady moiſt Border, and when the Plants come up, they require no other Care but to be cleaned from Weeds.

ALDER-TREE. *See* Alnus.

ALESANDER, or ALEXANDER. *See* Smyrnium.

ALKEKENGI. *See* Phyſalis.

ALLELUJAH. *See* Oxalis.

ALLIARIA, Sauce alone, or Jack by the Hedge. *See* Heſperis.

ALLIUM, Garlick.

The *Characters* are,

The Flowers are included in one common Spatha, which becomes dry; the Flower is compoſed of ſix oblong erect concave Petals, and ſix Awl-ſhaped Stamina, which extend the Length of the Petals, and are crowned with oblong Summits; in the Center is ſituated a ſhort three cornered Germen ſupporting a ſingle Style which is crowned by an acute Stigma. The Germen afterwards becomes an obtuſe three cornered Capſule, opening into three Parts, having three Cells, filled with roundiſh Seeds.

The *Species* are,

1. ALLIUM *caule planifolio bulbifero, radice compoſitâ, ſtaminibus tricuſpidatis.* Common manured Garlick.

2. ALLIUM *caule planifolio bulbifero, foliis crenulatis vaginis ancipitibus ſtaminibus tricuſpidatis.* Rocambole.

3. ALLIUM *ſcapo nudo ſemicylindrico foliis lanceolatis petiolatis umbellâ faſtigiatâ. Lin. Sp. Plant.* 300. Broad leaved wild Garlick or Ramſoms.

4. ALLIUM *caule planifolio umbellifero umbellâ globoſâ ſtaminibus tricuſpidatis radice laterali. Lin. Sp. Plant.* 294. Great round-headed Garlick of the *Holm Iſlands.*

5. ALLIUM *ſcapo nudo ſubcylindrico foliis lanceolatis ſeſſilibus umbellâ faſtigiatâ. H. U.* Yellow Moly.

6. ALLIUM *caule planifolio umbellifero ramulo bulbifero ſtaminibus ſimplicibus. Lin. Sp. Plant.* 296. Great broad leaved Moly with Lilly Flowers.

7. ALLIUM *caule planifolio umbellifero ſtaminibus filiformibus flore triplo longioribus foliis obliquis. Lin. Sp. Plant.* 296. Umbelliferous Garlick with plain Leaves, ſlender Stamina, which are three times the Length of the Flower, and oblique Leaves.

8. ALLIUM *caule ſubplanifolio umbellifero ſtaminibus ſubulatis longioribus umbellâ globoſâ foliis linearibus ſubconvexis. Lin. Sp. Pl.* 296. Umbelliferous Garlick with half plain Leaves, long Awl-ſhaped Stamina, globular Umbels, and narrow convex Leaves.

9. ALLIUM *caule planifolio umbellifero umbellâ faſtigiatâ ſtaminibus corollam æquantibus foliis lævibus. L. S. P.* Umbelliferous Garlick with plain Leaves, cloſe Umbels, Stamina equal with the Flower, and ſmooth Leaves.

10. ALLIUM *caule planifolio bulbifero vaginis teretibus ſpathâ muticâ ſtaminibus tricuſpidatis. H. Scan.* 227. Bulb-bearing Garlick, with plain Leaves, a taper Vagina, and three pointed Stamina.

11. ALLIUM *caule planifolio bulbifero ſtaminibus ſubulatis. Lin. Sp. Plant.* 297. Bulb-bearing Garlick with plain Leaves, and Awl-ſhaped Stamina.

12. ALLIUM *caule teretifolio umbellifero foliis ſemiteretibus ſtaminibus tricuſpidatis corollâ longioribus. Lin. Sp. Plant.* 297. Umbelliferous Garlick, with taper Leaves and trifid Stamina, which are longer than the Petals.

13. ALLIUM *caule teretifolio umbellifero umbellâ globoſâ ſtaminibus ſubulatis.* Umbelliferous Garlick with taper Leaves, a globular Umbel, and Awl-ſhaped Stamina.

14. ALLIUM *ſcapo nudo ancipiti foliis linearibus ſubtus convexis lævibus umbellâ ſubrotundâ ſtaminibus ſubulatis.* Greater Mountain Garlick with Leaves like Narciſſus.

15. ALLIUM *ſcapo nudo ancipiti foliis linearibus canaliculatis ſubtus ſubangulatis umbella faſtigiatâ. H. U.* Garlick with a naked Stalk, narrow, hollow Leaves, which are angular on their lower Side, and a compact Umbel.

16. ALLIUM *caule planifolio umbellifero foliis inferioribus hirſutis ſtaminibus ſubulatis. L. Sp. P.* Umbelliferous Garlick with hairy under Leaves, and Awl-ſhaped Stamina, commonly called *Dioſcoridis* Moly.

17. ALLIUM *caule planifolio umbellifero umbellâ globoſâ, ſtaminibus lanceolatis corollâ longioribus. Lin. Mat. Med.* 163. Umbelliferous Garlick with a plain Leaf, a globular Umbel, and Spear-ſhaped Stamina, which are longer than the Petals of the Flower.

18. ALLIUM *bulbiferum foliis linearibus canaliculatis, umbellâ minore.* Bulb-bearing Garlick, with narrow fiſtular Leaves and a ſmall Umbel.

19. ALLIUM *ſcapo nudo triquetro. Lin. Sp. Plant.* 300. Garlick with a naked triangular Stalk.

The two 1ſt Species are eaſily propagated by planting the Cloves, or ſmall Bulbs, in the Spring, in Beds about four or five Inches Diſtance from each other, keeping them clean from Weeds. About the beginning of *June,* the Leaves of the firſt Sort ſhould be tied in Knots, to prevent their ſpindling, or running to Seed, which will greatly enlarge the Bulb. In the Middle of *July,* the Leaves will begin to wither and decay, at which time they ſhould be taken out of the Ground, and hanged up in a dry Room, to prevent their rotting, and may be thus preſerved for Winter Uſe.

The Roots of the 2d may remain in the Ground till the Leaves are decayed, when their Bulbs may be taken up, and dried, to be preſerved for Uſe during the Winter Seaſon; but ſome of the Roots may be at the ſame time planted again for the ſucceeding Year. This Sort requires to be planted in Autumn, eſpecially on dry Ground, otherwiſe their Bulbs will not be large.

The 3d Sort was formerly in greater Eſteem than at preſent, it being rarely cultivated in Gardens, but is found wild in moiſt ſhady Places in many parts of *England*: and may be cultivated by planting the Roots in a moiſt ſhady Border at almoſt any time of the Year; but the beſt Seaſon is in *July,* juſt as the green Leaves are decaying.

The 4th Sort grows naturally in the *Holm Iſlands,* from whence it has been tranſplanted into ſeveral Gardens,

dens, where it is preſerved more for Variety than Uſe.

The 11th and 13th Sorts grow wild in the Northern Parts of *England*; but are by the Curious in Botany preſerved in Gardens. Theſe are very hardy, and may be removed in *July* or *Auguſt*, when their Leaves decay, and will thrive in almoſt any Soil or Situation.

The 5th Sort was formerly preſerved in Gardens, for the Sake of its yellow Flowers, but having a very ſtrong Garlick Scent, moſt People have rooted it out.

The 6th Sort is alſo preſerved by many for the Sake of Variety, but having a very ſtrong Scent, is not often admitted to the Flower Garden.

The 9th and 12th Sorts are ſometimes permitted to have a Place in Gardens for the Sake of Variety.

The 7th, 8th, and 10th Sorts grow naturally in *Tartary* and *Siberia*, from whence their Seeds were ſent to *Peterſburg*, and from thence ſome of the Botanic Gardens have been ſupplied with Seeds.

The 14th, 15th, and 16th Sorts have been planted in Gardens for the Variety of their Flowers, but of late Years moſt People have turned them out, to make Room for better Sorts. But the 16th multiplies ſo faſt by Offſets, as to render it difficult to extirpate them, when they have remained any time in a Garden.

This produces large Umbels of white Flowers, growing on Stalks about ſix Inches high, the Time of flowering is in *April* and *May*.

The 18th Sort was brought from *Virginia*, and is preſerved in Botanic Gardens for Variety's Sake, but has no great Beauty; it is very hardy, and will thrive in the open Air very well; and is propagated by its Bulbs, which are produced in Plenty on the Top of the Stalks.

They are all of them very hardy, and will thrive in almoſt any Soil or Situation, and are eaſily propagated either by their Roots, or from Seeds; if from the Roots, the beſt time is in Autumn, that they may take good Root in the Ground before the Spring, which is neceſſary, in order to have them flower ſtrong the following Summer. If by Seeds, they may be ſown on a Border of common Earth, either in Autumn, ſoon after the Seeds are ripe, or in the Spring following, and will require no farther Care, but to keep them clear from Weeds; in the following Autumn the Plants may be tranſplanted into the Borders where they are to remain for good.

The greateſt Part of theſe Plants produce their Flowers in *May*, *June*, and *July*.

The Yellow Moly will grow about a Foot high; and having ſome Beauty in the Flowers, is worthy of a Place in ſuch Borders of the Flower Garden, where few better Things will thrive. Theſe increaſe plentifully both by Roots and Seeds.

The 6th and 17th Sorts grow upwards of two Feet high; and when they are in Flower make a pretty Appearance: and as they are not troubleſome to keep, may be allowed a Place in the Borders of the Flower Garden.

All the other Sorts are equally hardy, and will grow in any Soil or Situation; but as they have little Beauty, they are rarely preſerved, except in Botanic Gardens for the Sake of Variety.

ALMOND TREE. *See* Amygdalus.

ALMOND DWARF. *See* Perſica.

ALNUS. The Alder Tree.

The *Characters* are,

It hath male and female Flowers, which are produced at remote Diſtances on the ſame Plant; the male Flowers are digeſted into a long Juli, or Katkin, which is looſe, imbricated and cylindrical. The Flowers come out from the Scales by threes; theſe have each four ſmall Stamina. The female Flowers are collected into a conical ſcaly Head; theſe have no Petals, but each an oval Germen, ſupporting two Styles, which are extended the Length of the Scales and are crowned with a ſingle Stigma, after the Flowers are paſt the Germen becomes a ſingle oval Seed, incloſed in the Scale of the Fruit.

The *Species* are,

1. Alnus *foliis obverſè ovatis rugoſis*. Alder with obverſe oval rough Leaves. Round leaved Alder.

2. Alnus *foliis ovato lanceolatis marginibus dentatis*. Alder with oval Spear-ſhaped Leaves, indented on their Edges. Long leaved Alder.

3 Alnus *pumila folio rotundo ſerrato*. Dwarf Alder with a round ſawed Leaf.

The 1ſt Sort here mentioned, is the common Alder, which is propagated in *England*. The 2d Sort is very common in *Auſtria* and *Hungary*, from whence I have been furniſhed with the Seeds. The Leaves of this Sort are longer, narrower, and not ſo glutinous as thoſe of the 1ſt, nor are they ſo rough; they are alſo of a thinner Conſiſtence. The 3d Sort grows naturally on the *Alps* and *Apennines*. This is a very humble Shrub ſeldom riſing more than a Foot high, the Branches always trailing on the Ground. This generally grows in moiſt Places and upon Bogs, ſo is with great Difficulty preſerved in Gardens. I have kept this Sort for three or four Years, by planting it in Pots, filled with a Peat Earth, taken from a Bog, and keeping the Earth conſtantly moiſt; but when planted in the full Ground they did not ſurvive one Summer. This Sort is only preſerved for Variety in Botanic Gardens, being of no Uſe or Beauty.

The two 1ſt Sorts delight in a very moiſt Soil, where few other Trees will thrive, and are a great improvement to ſuch Lands; they are propagated either by Layers or planting of Truncheons about three Feet in Length. The beſt Time for this is in *February*, or the Beginning of *March*; theſe ſhould be ſharpened at one End, and the Ground looſened with an Inſtrument before they are thruſt into it, leſt by the Hardneſs of the Soil the Bark ſhould be torn off, which may occaſion their Miſcarriage. They ſhould be thruſt into the Earth at leaſt two Feet, to prevent their being blown out of the Ground by ſtrong Winds, after they have made ſtrong Shoots. Theſe Plantations ſhould be cleared from all ſuch Weeds as grow tall, otherwiſe they will over bear the young Shoots; but when they have made good Heads, they will keep down the Weeds, and will require no farther Care.

If you raiſe them by laying down the Branches, it muſt be performed in *October*; and by the *October* following, they will have taken Root ſufficient to be tranſplanted out; which muſt be done by digging a Hole, and looſening the Earth in the Place where each Plant is to ſtand, planting the young Tree at leaſt a Foot and a Half deep, cutting off the Top to about nine Inches above the Surface, which will occaſion them to ſhoot out many Branches.

The Diſtance theſe Trees ſhould be placed (if deſigned for a Coppice) is ſix Feet ſquare; and if the ſmall lateral Shoots are taken off in the Spring, it will very much ſtrengthen your upright Poles, provided you leave a few ſmall Shoots at Diſtances upon the Body thereof, to detain the Sap for the Increaſe of its Bulk.

Theſe Trees may be alſo planted on the ſides of Brooks (as is uſual for Willows), where they will thrive exceedingly, and may be cut for Poles every fifth or ſixth Year. This Wood is uſed by Turners, and will endure a long time under Ground, or laid in Water.

The Alder Tree is alſo very proper to Plant for Hedges, in moiſt Ground, where they thrive very faſt, and may be trained into very thick cloſe Hedges to the Height of twenty Feet and upwards. The Leaves of this Tree being large, and of a deep Green, have a very good effect in Hedges; and where they are planted for Coppice Wood in moiſt Land, make a much better Figure than moſt other aquatic Trees; ſo that where the Beauty of ſuch Plantations is conſidered, theſe ſhould be preferred to other Sorts uſually planted in ſwampy Grounds.

ALNUS NIGRA BACCIFERA. *See* Frangula.

ALOE [*Gr.* 'Αλοὴ.]

The *Characters* are,

The Flower is naked, having no Empalement, it is of one Leaf, having a long ſmooth Tube, which is divided at the Top into ſix Parts, which ſpread open; it hath ſix Awl-ſhaped Stamina, which are inſerted at their Baſe to the Germen, and are extended the Length of the Tube; theſe are crowned with oblong Summits; in the Center is ſituated the oval Germen, ſupporting a ſingle Style, which is of the ſame Length with the Stamina, and is crowned with a trifid Stigma. The Germen afterwards becomes an oblong Capſule, having three Furrows, which is divided into three Cells opening in three Parts, and filled with angular Seeds.

The *Species* are,

1. ALOE *floribus pedunculatis cernuis corymboſis ſub-cylindricis. L. S. P.* Aloe with dependent Flowers, having Foot Stalks which are ranged in a cylindrical Corymbus. The Mitre-ſhaped Aloe.

2. ALOE *foliis dentatis erectis ſucculentibus planis maculatis floribus luteis in Thyrſo dependentibus.* Aloe with erect ſucculent Leaves, which are plain, indented, and ſpotted, and yellow Flowers, growing in a looſe Spike, hanging downward. The common *Barbadoes* Aloe.

3. ALOE *foliis amplexicaulibus reflexis, margine dentatis, floribus cylindricis caule fruticoſa.* Aloe with Leaves embracing the Stalks, which are reflexed and indented on their Edges, Flowers growing cylindrical, and a ſhrubby Stalk. The Sword Aloe.

4. ALOE *foliis latioribus amplexicaulibus, margine & dorſo ſpinoſis, floribus ſpicatis, caule fruticoſo.* Aloe with broader Leaves embracing the Stalks, whoſe Edges and Back are ſet with Spines, Flowers growing in Spikes, and a ſhrubby Stalk. *African* Aloe.

5. ALOE *foliis latiſſimis amplexicaulibus, maculatis, margine ſpinoſis floribus umbellatis.* Aloe with very broad ſpotted Leaves embracing the Stalk, whoſe Edges are ſet with Spines, and Flowers, growing in an Umbel. By ſome called the Sope Aloe, and by others *Carolina* Aloe.

6. ALOE *foliis latioribus amplexicaulibus maculatis margine ſpinoſis floribus ſpicatis.* Aloe with broad ſpotted Leaves embracing the Stalks, whoſe Edges have Spines, and Flowers growing in a Spike.

7. ALOE *foliis enſiformibus inermis ancipitibus floribus laxè ſpicatis caule fruticoſo.* Aloe with Sword-ſhaped ſmooth Leaves, ſtanding two Ways, the Flowers growing in looſe Spikes, and a ſhrubby Stalk.

8. ALOE *foliis amplexicaulibus utrâque ſpinoſis, floribus ſpicatis.* Aloe with Leaves embracing the Stalks, which are prickly on every Side, and Flowers growing in Spikes.

9. ALOE *floribus pendunculatis cernuis racemoſis priſmaticis ore patulo æquali. Lin. Sp. Plant.* 321. Aloe with hanging Branching Flowers, having Foot Stalks, and ſpreading equally at the Brim. Partridge-breaſt Aloe.

10. ALOE *foliis erectis ſubulatis radicatis undique inerme ſpinoſis. Hort. Cliff.* 131. Aloe with erect Awl-ſhaped Leaves, ſet with ſoft Spines on every Part.

11. ALOE *floribus ſeſſilibus infundibuli formibus bilabiatis laciniis quinque revolutis ſumma erecta. Lin. Sp. Plant.* 322. Aloe with Funnel-ſhaped Flowers, without Foot Stalks, opening in two Lips, and cut into five Segments, which turn backward, and are erect at the Top.

12. ALOE *floribus ſeſſilibus ovatis crenatis ſegmentis interioribus coniventibus. Lin. Sp. Plant.* 322. Aloe with oval crenated Flowers, without Foot Stalks, and the interior Segments ſcarce appearing.

13. ALOE *ſeſſilis foliis lingui formibus maculatis floribus pedunculatis cernuis.* Aloe with dwarf Tongue-ſhaped ſpotted Leaves, and hanging Flowers, which have Foot Stalks. Tongue Aloe.

14. ALOE *floribus ſeſſilibus bilabiatis labio ſuperiore erecto inferiore patente. Lin. Sp. Plant.* 322. Aloe with ſeſſile Flowers, gaping with two Lips, the upper being erect, and the under ſpreading. Pearl Aloe.

15. ALOE *foliis longiſſimis & anguſtiſſimis marginibus ſpinoſis, floribus ſpicatis.* Aloe with very long narrow Leaves, having Spines on their Edges, and Flowers growing in Spikes. The Succotrine Aloe.

16. ALOE *caule brevi, foliis amplexicaulibus bifariam verſis ſpinis marginibus erectis floribus capitatis.* Aloe with a ſhort Stalk, Leaves ſtanding two Ways, which embrace the Stalk; the Spines on the Edges erect, and Flowers growing in a Head.

17. ALOE *ſeſſilis foliis brevioribus planis carnoſis apice triquetris marginibus inerme ſpinoſis.* Low Aloe with ſhort plain fleſhy Leaves, triangular at their Ends, and Borders ſet with ſoft Spines. Cobweb Aloe.

18. ALOE *foliis ovato-lanceolatis carnoſis apice triquetris angulis inerme dentatis. H. C.* Aloe with oval Spear-ſhaped fleſhy Leaves, having three Angles at their Extremities, which are indented and ſet with ſoft Spines.

19. ALOE *floribus ſeſſilibus triquetris bilabiatis labio inferiore revoluto. L. S. Pl.* Aloe with Flowers divided into three Parts, the under Lip being turned back. Cuſhion Aloe.

20. ALOE *ſeſſilis foliis carinatis utrâque verrucoſis bifariam verſis.* Low Aloe with Keel-ſhaped Leaves, warted on every Part, and ſtanding two Ways. Pearl tongue Aloe.

21. ALOE *ſeſſilis foliis carinatis verrucoſis apice triquetris carnoſis.* Low Aloe with fleſhy, Keel-ſhaped, ſpotted Leaves, which are triangular at their Extremities.

22. ALOE *foliis latis undulatis maculoſis floribus ſpicatis infundibuli formibus limbo revolutis.* Aloe with broad ſpotted waved Leaves, and Funnel-ſhaped Flowers growing in Spikes, which are turned back at their Brim. *Guiney* Aloe.

23. ALOE *pumila, foliis longis anguſtis integerrimis maculatis radice repente.* Low Aloe with long narrow entire Leaves, which are ſpotted, and a creeping Root. *Zeylon* Aloe.

24. ALOE *foliis amplexicaulibus nigricantibus undique ſpinoſis.* Aloe with dark green Leaves embracing the Stalks, which are beſet with Spines on every Side. This is commonly, but falſely called *Aloe ferox.*

25. ALOE *floribus ſeſſilibus reflexis imbricatis priſmaticis. L. S. Pl.* Aloe with reflexed Flowers growing cloſe to the Stalks, in form of a Priſm, lying over each other like Tiles on a Houſe; commonly called *Iris Uvaria.*

The 1ſt Sort of Aloe grows with an upright Stalk, to the Height of five or ſix Feet, the Leaves cloſely embrace the Stalks; theſe are thick, ſucculent, broad at their Baſe, growing narrower, and ending in a Point, they are of a dark green Colour, and have Spines on the Edges, as alſo a few on their upper Surface, the Leaves ſtand erect, and draw together towards the Top, where they form the Reſemblance of a Mitre, from whence it is called the Mitre Aloe. The Flower Stem riſes about three Feet high, on the Top of which the Flowers come out in a ſort of globular Bunch at firſt, but afterwards are formed into a cylindrical Spike, theſe have long Foot Stalks, which come out horizontally, and the Flowers hang downward, they are tubulous, and are cut into ſix unequal Segments to the Bottom, three being alternately broader than the others, and ſpread open at the Brim.

There are ſix Stamina, three of which are as long as the Tube of the Flower, the other three are ſhorter. Theſe are crowned with flat oblong Summits of a gold Colour. The three-corned Germen is ſituated in the Bottom of the Flower, ſupporting a ſingle Style, which is ſhorter than the Stamina, having no Stigma on the Top. The Tube of the Flower is of a fine red Colour, and the Brim of a pale Green, ſo that it makes a pretty Appearance when the Spikes of Flowers are large.

This Sort will live in a warm dry Green-houſe in Winter, and may be placed in the open Air in Summer, in a ſheltered Situation; but the Plants ſhould not have much Wet, leſt it ſhould rot their Stems. With this Management the Plants will not grow ſo faſt, as when they are placed in a Stove, but they will be ſtronger, and their Stems will ſupport their Heads much better.

The 2d Sort is very common in the Iſlands of *America*, where the Plants are propagated upon the pooreſt Land, to obtain the *Hepatic Aloes*, which is brought to *England*, and is uſed chiefly for Horſes.

The Leaves of this Sort are about four Inches broad at their Baſe, where they are near two Inches thick, and diminiſh gradually to a Point. Theſe are about two Feet long, in old Plants, and have a few Indentures on their Edges; at the End of each is placed a ſoft Spine, the Leaves are of a Sea-green Colour, and when young are ſpotted with white. The Flower Stem riſes near three Feet high, and the Flowers ſtand in a ſlender looſe Spike, with very ſhort Foot Stalks, and hang downwards. They are tubulous, and cut into ſix Parts, are of a bright yellow Colour, and the Stamina ſtand out beyond the Tube. This never produces Seed in *England*, and is too tender to live through the Winter in our Climate, in a common Green-houſe, therefore it ſhould be placed in a moderate Degree of Warmth in that Seaſon. I have known Plants of this Kind, which have had an oiled Cloth tied about their Roots, and hung up in a warm Room more than two Years, and afterwards planted in Pots, which have grown very well, from whence the Plant has been called *Sempervivum.*

The 3d Sort will grow to the Height of ten or twelve Feet, with a ſtrong naked Stem great Part of the Length, the Leaves growing at the Top, which cloſely embrace the Stalk; theſe are about *two* Inches broad at their Baſe, growing narrower to a Point, and are reflexed downwards. Theſe are indented on their Edges, each being armed with a ſtrong crooked Spine. The Leaves are of a Sea-green Colour, and very ſucculent. The Flowers grow in a pyramidal Spike, are tubulous, and of a bright red Colour. Theſe are in Beauty in *November* and *December.*

This Sort will live through the Winter in a good Green-houſe, but they will not flower unleſs they have a moderate Share of Warmth, therefore the Pots ſhould be removed into a Stove in *October*, which ſhould not be kept above temperate Heat, in which Situation they ſeldom fail to flower.

The 4th Sort is ſomewhat like the 3d, but the Leaves are broader, and have ſeveral Spines on their Backs towards their Extremities. The Flowers of this grow in a looſer Spike, and the Plants never put out any Suckers, ſo that it is very difficult to increaſe.

The 5th Sort ſeldom riſes much above two Feet high, the Leaves are very broad at their Baſe, where they cloſely embrace the Stalk, and gradually decreaſe to a Point. The Edges are ſet with ſharp Spines, and the under Leaves ſpread open horizontally every Way; theſe are of a dark green Colour ſpotted with white, ſomewhat reſembling the Colour of ſoft Sope, from whence ſome have given it the Title of Sope Aloe. The Flowers grow in Umbels on the Top of the Stalks, which are of a beautiful red Colour, and appear in *Auguſt* and *September.* This Sort is hardy, ſo may be kept in a common Green-houſe in Winter, and in the Summer placed in the open Air.

The 6th Sort is ſomewhat like the 5th in its Manner of Growth, but the Leaves are broader, of a lighter green Colour, the Edges and alſo the Spines are of a Copper Colour, and the Flowers grow in looſe Spikes. This is as hardy as the former, ſo may be treated in the ſame Manner. It flowers in *September.*

The 7th Sort grows to the Height of ſix or ſeven Feet, with a ſtrong Stem, toward the upper Part of which are produced two, three, or four Heads, compoſed of long compreſſed pliable Leaves, of a Sea-green Colour, entire, and ending in obtuſe Points; theſe are placed two Ways, lying over each other with their Edges the ſame Way. The Flowers are produced in ſhort looſe Spikes, which are of a red Colour, and appear at different Times of the Year.

The 8th Sort is an humble Plant, ſeldom riſing more than a Foot high; the Leaves grow near the Ground, which are broad at their Baſe, where they embrace the Stalk, and gradually diminiſh to a Point; they are of a Sea-green Colour, with ſome white Spots; their Edges, and alſo their upper Parts below and above, are beſet with pretty ſharp Spines; the Flowers grow in looſe Spikes, the tubulous Part being red, and the Brim of a light green Colour.

The 9th Sort is a low Plant, ſeldom riſing above eight Inches high. The Leaves of this are triangular, and turn back at their Extremity; they are fleſhy and entire, their Edges being very ſlightly ſawed. Theſe are curiouſly veined and ſpotted, ſomewhat like the Feathers on a Partridge's Breaſt, from whence it had the Name. The Flowers grow in very looſe Spikes, upon Stalks about one Foot high; they are of a fine red Colour tipped with Green. This will live in a good Green-houſe through the Winter.

I have raiſed a Variety of this from Seeds which I received from the *Cape of Good Hope*, with broader and flater Leaves, which ſpread more than thoſe of the former, and are not ſo beautifully ſpotted; but as theſe Plants have not flowered yet, ſo I do not know if it will prove to be a diſtinct Species.

The 10th Sort is alſo a very low Plant, never riſing to have a Stalk; the Leaves are broad at their Baſe, but are tapering to a Point where they are triangular; theſe are beſet on their Edges, and both Surfaces, with ſoft Spines, very cloſely, from whence this Plant had the Name of Hedgehog Aloe. The Flowers grow in a looſe Head, on the Top of the Stalk, which is very thick, but ſeldom a Foot high: They are of a fine red Colour below, but of a pale Green above. This Sort may be preſerved through the Winter in a good Green-houſe, and placed in the open Air in Summer.

The 11th Sort grows near a Foot high, and is furniſhed with triangular Leaves, from the Ground upward; theſe are of a dark green Colour, and are placed in Form of a Triangle; the Flowers grow thinly upon very ſlender Foot Stalks, and are of an herbaceous Colour, and their upper Part turns backward. This Sort requires a moderate Warmth in Winter, ſo ſhould be placed in a cool Part of the Stove.

The 12th Sort grows ſomewhat like the former, being beſet with Leaves from the Bottom, but theſe are rounder, and end in ſharp Points; the Flowers grow upon taller Stalks, which branch out and grow in long cloſe Spikes. There is a Variety of this Sort which has been raiſed from Seeds, which is much larger, the Leaves thicker, and the Flowers grow upon taller Stalks, but this is only a ſeminal Variety.

This Sort may be preſerved through the Winter in a good Green-houſe, but muſt have very little Water given it during the cold Weather.

The 13th Sort grows with its Leaves near the Ground, which are about ſix Inches in Length, and ſhaped like a Tongue, from whence it had the Title of Tongue Aloe. The Flowers grow in ſlender looſe Spikes, each hanging downward, are of a red Colour below, and Green at the Top. This is pretty hardy, ſo may be kept in a common Green-houſe in Winter and ſet abroad in Summer. There is a Variety of this Sort, with Leaves much more ſpotted.

The 14th Sort is of humble Growth; the Leaves come out on every Side without Order near the Ground, they are thick, triangular at their Ends, and cloſely ſtudded with white Protuberances, from whence it was called Pearl Aloe. There is a ſmaller Sort of this which hath been long preſerved in the *Engliſh* Gardens, but the Manner of its flowering being the ſame, I ſuſpect it to be only a Variety. This may be preſerved through the Winter in a common Green-houſe. It flowers at different Seaſons of the Year.

The 15th Sort is the true Succotrine Aloe, from whence the beſt Sort of Aloe for Uſe in Medicine is produced. This hath long narrow ſucculent Leaves, which come out without any Order, and form large Heads. The Stalks grow three or four Feet high, and have two, three, and ſometimes four of theſe Heads, branching out from it: The lower Leaves ſpread out on every Side, but the upper Leaves turn inward toward the Center; the Flowers grow in long Spikes, upon Stalks about two Feet high, each ſtanding on a pretty long Foot Stalk; they are of a bright red Colour tipped with Green: Theſe generally appear in Winter. This Sort may be preſerved through the Winter in a warm Green-houſe, but the Plants ſo managed will not flower ſo frequently, as thoſe which have a moderate Degree of Warmth in Winter.

The 16th Sort reſembles the 8th in ſome Particulars, but the Leaves are much broader, and ſpread on every Side; whereas thoſe of the 8th are ranged only two Ways, and are narrow. This Sort flowers but ſeldom, whereas the 16th flowers annually in the Spring. This Plant is hardy, ſo may be kept through the Winter in a common Green-houſe.

The 17th Sort never riſes from the Ground, but the Leaves ſpread flat on the Surface; theſe are plain, ſucculent, and triangular toward their End. The Borders of the Leaves, and alſo the Ridge of the Angle on their under Side, are cloſely beſet with ſoft white Spines. The Flower Stalk riſes about a Foot high, is very ſlender, and hath three or four ſmall herbaceous Flowers ſtanding at a Diſtance from each other. Theſe are tubulous, and cut into ſix Parts at the Brim, which turn backward. This Sort is tender, ſo ſhould be placed in Winter in a moderate Degree of Heat, and muſt have little Water. It never puts out Offsets, ſo is generally increaſed by planting of the Leaves.

The 18th Sort is alſo a ſmall Plant growing near the Ground; the Leaves of this Sort are almoſt cylindrical toward their Baſe, but angular near their Ends, and are ſet with ſhort ſoft Spines at the Angles: Theſe Leaves are ſhorter and of a darker green Colour than thoſe of the former Sort, and the Plants produce many Suckers on every Side. I have raiſed a Variety of this from Seeds, which hath ſhorter, whiter, and ſmoother Leaves, but this hath not yet flowered. This will live in a common Green-houſe in Winter.

The 19th Sort hath very ſhort thick ſucculent Leaves, which are compreſſed on their upper Side like a Cuſhion, from whence it had the Name. This grows very cloſe to the Ground, and puts out Suckers on every Side: The Flowers grow on ſlender Stalks, and are of an herbaceous Colour. This may be preſerved through the Winter in a good Green-houſe, but ſhould have very little Water during that Seaſon, eſpecially when it hath no artificial Heat.

The 20th Sort hath long narrow Tongue-ſhaped Leaves, which are hollowed on their upper Side, but Keel-ſhaped below: Theſe are cloſely ſtudded on every Side, with ſmall white Protuberances, from whence the Plant hath had the Title of Pearl Tongue Aloe. The Flowers of this Kind grow on pretty tall Stalks, and form looſe Spikes, each hanging downward: They are of a beautiful red Colour, tipped with Green. This Sort produces Offsets in Plenty, and is ſo hardy as to live in a common Green-houſe through the Winter. It flowers at different Seaſons of the Year.

The 21ſt Sort hath ſome Reſemblance to the laſt, but the Leaves are much broader and thicker; theſe ſpread out every Way, and are not ſo concave on their upper Surface, nor are the Protuberances ſo large as thoſe of the former; the Flowers are of a paler Colour, and the Spikes are ſhorter. I have raiſed Plants from the Seeds of this Sort, which have varied from the Original, but none of them approached near the twentieth Sort. This is as hardy as the former Sort.

The 22d Sort hath knobed creeping fleſhy Roots, which ſpread over the Pots; the Leaves come up ſingle, are narrow at Bottom, wide in the Middle, where they are waved on their Edges, and decreaſe again at their Extremities; they are about a Foot and a Half long, and four Inches wide in their broadeſt Part; theſe are of a dark green Colour, marbled over with White. The Flower Stem ariſes immediately from the Root, grows about two Feet high, the upper Part being cloſely ſet with very white Flowers which are tubulous, and cut into ſix Parts, which are reflexed back, ſo as to have much the Appearance of a large ſingle Hyacinth. This Plant increaſes plentifully by its creeping Roots, but is very tender, ſo muſt conſtantly remain in the Stove. It uſually flowers in *July*.

The 23d Sort is a low Plant with creeping fleſhy Roots, the Leaves are about nine Inches long, and one and a Half broad at Bottom, gradually diminiſhing to the Top where it ends in a Point. The Flowers of this I have not ſeen, nor have I yet heard of its flowering in *Europe*; for in the Garden at *Amſterdam*, where I ſaw more than fifty Pots of this Plant, the Gardener aſſured me neither of them had then flowered. This Sort increaſes very faſt by Suckers from the Root, but is tender, ſo muſt be conſtantly kept in the Stove.

The 24th Sort riſes to the Height of eight or ten Feet, with a ſtrong Stem; the Leaves grow on the Top, which cloſely embrace the Stalk; theſe come out irregularly, and ſpread every Way; they are near four Inches broad at their Baſe, and diminiſh gradually to the Top, where they end in a Spine. Theſe are near two Feet long, of a dark green Colour, and cloſely beſet with ſhort thick Spines on every Side. This Sort hath not as yet flowered in *England*, nor does it put out Suckers, ſo that it is difficult to increaſe. It muſt have a warm Green-houſe in Winter and very little Water.

The 25th Sort hath very long narrow triangular Leaves, ſhaped like thoſe of the Bull-ruſh; the Flowers are produced in cloſe thick Spikes, upon Stalks near three Feet high, of an Orange Colour, having ſix yellow Stamina, which come out beyond the Tube of the Flower; ſo that when the Plants are ſtrong, and produce large Spikes, they make a fine Appearance. It flowers in *Auguſt* and *September*. There is a Variety of this with narrower Leaves, and longer Spikes of Flowers.

The Soil in which theſe Plants thrive beſt, is one Half freſh light Earth from a Common (and if the Turf is taken with it and rotted, it is much better); the reſt ſhould be white Sea Sand and ſifted Lime Rubbiſh, of each of theſe two a fourth Part; mix theſe together ſix or eight Months at leaſt before it is uſed, obſerving to turn it over often in this Time.

The Middle of *July* is a proper Seaſon to ſhift theſe Plants; at which Time you may take them out of the Pots, and with your Fingers open the Roots, and ſhake out as much of the Earth as poſſible, taking off all dead or mouldy Roots, but do not wound or break the young freſh ones: Then fill the Pot about three Parts full of the above-mentioned Earth, putting a few Stones in the Bottom of the Pot, to drain off the Moiſture; and after placing the Roots of the Plant in ſuch a Manner as to prevent their interfering too much with each other, put in as much of the ſame Earth, as to fill the Pot almoſt to the Rim, and ſhake the Plant, ſo as to let the Earth in between the Roots; and then with your Hand ſettle it cloſe to the Roots of the Plant, to keep it ſteady in the Pot; then water them gently, and ſet them abroad in a ſhady Place, where they may remain for three Weeks, giving them gentle Waterings, if the Weather ſhould prove hot and dry.

Toward the latter End of *September*, in a dry Day, remove them into the Houſe again, obſerving to give them as much free open Air as poſſible, while the Weather holds warm; but, if the Nights are cool, you muſt ſhut up the Glaſſes, and give them Air only in the Day; and, as the Cold increaſes, you muſt decreaſe opening the Glaſſes, but give them gentle Waterings often, till the Middle of *October*, when you muſt abate them, according to the Heat of the Houſe in which they are kept. Thoſe Plants which are placed in a Stove, will require to be watered at leaſt once a Week, moſt Part of the Winter; whereas thoſe which are kept in a Green-houſe without artificial Heat, ſhould not be watered oftener in Winter than once a Month.

When theſe hardier Sorts of Aloes are placed abroad in Summer, they ſhould have but little Water given them; and if much Rain ſhould fall during the Time they are abroad, they ſhould be ſcreened from it: For when they imbibe much Wet in Summer, they frequently rot the following Winter, eſpecially if they are not kept in a moderate warm Air. Therefore, thoſe who chooſe to treat theſe Plants hardily, ſhould be cautious of their receiving too much Moiſture.

The tender Sorts ſhould conſtantly remain in the Stove, or be removed in the Summer to an airy Glaſs Caſe, where they may have free Air in warm Weather, but be protected from Rain and Cold. With this Management the Plants will thrive and increaſe, and ſuch of them as uſually flower, may be expected to produce them in Beauty at their Seaſons.

The hardier Sorts thrive much better when they are expoſed in Summer, and ſecured from the Cold and Rain in Winter, than if they are treated more tenderly. For when they are placed in a Stove, they are kept growing all the Winter, whereby they are drawn up weak; and although they will flower oftener when they have a moderate Share of Heat, yet in two or three Years, the Plants will not appear ſo ſightly as thoſe which are more hardily treated.

The 25th Sort is hardy enough to live abroad in mild Winters, if planted in a warm Border and dry Soil; but as they are often deſtroyed in ſevere Winters, ſo it is proper to keep ſome Plants in Pots, which may be ſheltered in Winter under a Frame, to preſerve the Sort. This is propagated by Seeds, which the Plants generally produce in Plenty: The Seeds muſt be ſown in Pots ſoon after they are ripe, and in Winter ſhould be ſheltered under a common hot Bed Frame: In Spring the Plants will come up, when they ſhould be inured to bear the open Air by Degrees; and when large enough to remove, ſome of them ſhould be planted in Pots, and others in a warm Border, where they will require to be ſheltered the following Winter, as they will not have obtained ſufficient Strength to reſiſt the Cold.

Moſt of theſe Aloes are increaſed by Offsets, which ſhould be taken from the Mother Plant, at the Time when they are ſhifted, and muſt be planted in very ſmall Pots, filled with the ſame Earth as was directed for the old Plants; but if, in taking the Suckers off, you obſerve that Part which joined to the Mother Root to be moiſt, you muſt let them lie out of the Ground in a ſhady dry Place two or three Days to dry before they are planted, otherwiſe they are very ſubject to rot.

After planting, let them remain in a ſhady Place (as was before directed in ſhifting the old Plants) for a Fortnight, when you ſhould remove the tender Kinds to a very moderate hot Bed, plunging the Pots therein, which will greatly facilitate their taking new Root; but obſerve to ſhade the Glaſſes in the Middle of the Day, and to give them a great Share of Air.

Toward the Middle of *Auguſt*, begin to harden theſe young Plants, by taking off the Glaſſes in good Weather, and by raiſing them at other Times with Bricks, that the Air may freely enter the Bed, which is abſolutely neceſſary for their Growth, and to prepare them to be removed into the Houſe, which muſt be done toward the End of *September*, and managed as before directed for the old Plants.

The *African* Aloes, for the moſt Part, afford Plenty of Suckers, by which they are increaſed; but thoſe few that do not, may be moſt of them propagated, by taking off ſome of the under Leaves, laying them to dry for ten Days or a Fortnight, as was directed for the Offsets; then plant them in the ſame Soil as was directed for them, putting that Part of the Leaf which did adhere to the old Plant, about an Inch, or an Inch and a Half (according to the Size of the Leaf) into the Earth, giving them a little Water to ſettle the Earth about them; then plunge the Pots into a moderate hot Bed, obſerving to ſcreen them from the Violence of the Sun, and give them gentle Refreſhings with Water once a Week: The beſt Seaſon for this is in *June*, that they may puſh out Heads before Winter.

The ſecond Sort produces the Aloes commonly ſold in the Shops for Horſes, and is called *Aloe Hepatica.* But it is from the 15th Sort, the Succotrine, or beſt Sort of Aloes, is produced; which is done by cutting their Leaves tranſverſly, and placing earthen Veſſels under them to receive the Juice which drops from theſe cut Leaves; which Juice, when inſpiſſated, becomes the Aloe which is uſed in Medicine. But I believe in making the coarſer Sort of Aloes, they preſs the Leaves, whereby a greater Quantity of Juice is obtained: But this is not near ſo fine as the other.

ALOE AMERICANA MURICATA. See *Agave.*

ALOE, the ſtriped, is a Variety of the former.

ALOIDES. See *Stratiotes.*

ALOPECUROS Fox-tail, a kind of Graſs.

ALPINIA, ſo called after *Proſper Alpinus.*

The *Characters* are,

It hath a trifid Empalement, upon which reſts the Germen. The Flower is of one Leaf, which is unequally divided at the Top into four Parts, and reſembles a perſonated Flower; the upper Segment which reſembles the Helmet, and alſo the two Side Segments, are indented in the Middle, and the lower one is divided into three Parts at the Brim; in the Center is placed the round Germen, ſupporting a ſingle Style crowned with a three cornered Stigma: This is attended by a ſingle Stamina fixed to the Tube of the Flower, which is crowned with a very narrow Summit. After the Flower is paſt, the Germen becomes an oval fleſhy Fruit, divided into three Parts, incloſing ſeveral oval Seeds, which have Tails.

We know but one Species of this Genus, *viz.*

Alpinia *Racemoſa alba Cannacori foliis. Nov. Gen.* White branching Alpinia, with Leaves like the Reed.

This Plant is a Native of the *Weſt-Indies*, from whence it has been brought into ſome of the curious Gardens of *Europe*, where it muſt be preſerved in a warm Stove, and the Pots plunged into a hot Bed of Tanners Bark, otherwiſe it will not thrive in this Country. The Leaves decay every Winter, and are puſhed out from the Roots every Spring, like the Ginger and Maranta; ſo ſhould be managed in the ſame Manner as is directed for thoſe two Plants, and may be propagated by parting the Roots when the Leaves decay.

ALTHÆA, Marſhmallow.

The *Characters* are,

The Flower hath a double Empalement, the outer is of one Leaf, and is unequally divided into nine narrow Segments at the Brim; the inner one is alſo of one Leaf, cut into five broad acute Segments at the Top, theſe are both permanent. The Flower hath five Petals which coaleſce at their Baſe, but ſpread open above and are ſhaped like an Heart. There are many Stamina joined below and form a Kind of Cylinder, but are looſe above, and are inſerted in the Column. In the Center is placed the orbicular Germen, ſupporting a ſhort cylindrical Style, crowned with numerous Stigma, which are of equal Length with the Stamina. The Empalement afterward becomes an orbicular depreſſed Capſule, divided into ſeveral Cells, each containing one compreſſed Kidney-ſhaped Seed.

The *Species* are,

1. Althæa *foliis ſimplicibus acuminatis acutè dentatis tomentoſis.* Marſhmallow with ſingle woolly Leaves, indented in ſharp Segments. Common Marſhmallow.

2. Althæa *foliis rotundioribus angulatis tomentoſis.* Marſhmallow with angular woolly pointed Leaves.

3. Althæa *foliis trifidis piloſo hiſpidis. Hort. Cliff.* 349. Marſhmallow with trifid hairy pungent Leaves.

4. Althæa *foliis inferioribus palmatis ſuperioribus digitatis caule fruticoſo. Hort. Upſal.* 205. Marſhmallow with the under Leaves ſhaped like a Hand, the upper Leaves more divided, and a ſhrubby Stalk.

The 1ſt Sort is the common Marſhmallow, which grows naturally in moiſt Places in divers Parts of *England*, and is frequently uſed in Medicine. This hath a perennial Root and an annual Stalk, which periſhes every Autumn. The Stalks of this Plant grow erect, to the Height of four or five Feet, and put out a few lateral Branches on their Sides; theſe are garniſhed with Leaves which are hoary and ſoft to the Touch; they are angular, and placed alternately on the Branches; the Flowers come out from the Wings of the Leaves, which are ſhaped like thoſe of the Mallow, but ſmaller and of a pale Colour. Theſe appear in *June* and *July*, and the Seeds ripen in *September*. It may be propagated faſt enough, either by Seeds or parting their Roots. When propagated by Seeds they ſhould be ſown in Spring, but if by parting of the Roots, the beſt Time is in Autumn, when the Stalks decay. It will thrive in any Soil or Situation, but in moiſt Places will grow larger than in dry Land. The Plants ſhould not be nearer together than two Feet, for their Roots ſpread wide on every Side.

The 2d Sort is ſomewhat like the firſt, but the Leaves are not ſo long, nor do they end in a ſharp Point, but are angular, and rounder. I have cultivated this in the *Chelſea* Garden many Years, and find it retains its Difference.

The 3d Sort grows naturally in *Spain* and *Portugal*, from whence I have received the Seeds. This is a low Plant, whoſe Branches trail on the Ground, unleſs ſupported by Stakes. The Leaves and Stalks are beſet with ſtrong Hairs, the Flowers come out at the Wings of the Stalks, and are ſmaller than thoſe of the common Sort, having purpliſh Bottoms. The Leaves are deeply cut into three Parts, and have long Footſtalks; the Stalks are woody but ſeldom laſt more than two Years.

If the Seeds of this Sort are ſown in *April*, the Plants will flower in *July*, and the Seeds ripen in *September*. They ſhould be ſown in the Places where they are to remain, for as the Roots ſhoot deep into the Ground, ſo unleſs the Plants are removed very young, they ſeldom ſurvive Tranſplanting.

The 4th Sort has a woody Stem, riſing to the Height of four or five Feet, and puts out many Side Branches; theſe are garniſhed with Leaves of different Shapes; thoſe which are on the lower Part of the Branches are like a Hand, very ſlightly cut toward their Outſide, but thoſe which are placed on the upper Part of the Branches, are deeply cut into ſeveral Parts; theſe are hairy, and grow alternately on the Branches; the Flowers come out from the Wings of the Stalks in the ſame Manner as the other Sorts, but are not ſo large as thoſe of the common Marſhmallow; they are of a deeper red Colour, and the Empalement is much larger. This Sort ſeldom flowers the firſt Year, unleſs the Summer proves warm; but when the Plants live through the Winter, they will flower early the following Summer, ſo will produce good Seeds. It grows naturally in *Hungary* and *Iſtria*, from which Places I have received the Seeds.

It is propagated by Seeds, ſown in Spring, in the Place where the Plants are to remain; or if otherwiſe, the Plants muſt be tranſplanted young, elſe they will not ſucceed. They ſhould have a ſheltered Situation and dry Soil, otherwiſe they will not live through the Winter in *England*. When theſe Plants grow in a ſtony Soil, or in Lime Rubbiſh, they will be ſtinted in their Growth, but they will have leſs Sap in their Branches, ſo will better endure the Cold of this Climate. This Sort ſeldom continues longer than two Years in *England*, but as the Seeds ripen here, ſo the Plants may be had in Plenty.

ALTHÆA FRUTEX. *See* Hibiſcus *and* Lavatera.

ALYSSOIDES. *See* Alyſſum *and* Lunaria.

ALYSSON ALPINUM LUTEUM. *See* Draba.

ALYSSON SEGETUM. *See* Myagrum.

ALYSSON SERPILLI FOLIO. *See* Clypeola.

ALYSSON VERONICE FOLIO. *See* Draba.

ALYSSON VULGARE. *See* Draba.

ALYSSUM, Madwort.

The *Characters* are,

The Flower hath an oblong four leaved Empalement, which falls away. It hath four Petals in Form of a Croſs, which ſpread open above the Empalement. There are ſix Stamina, two of which are ſhorter than the other four; theſe are crowned with broad Summits; in the Center of the Flower is ſituated the oval Germen, ſupporting a ſingle Style, crowned with an obtuſe Stigma. After the Flower is paſt, the Germen becomes a globular or compreſſed Seed Veſſel, in which are lodged ſeveral compreſſed Seeds.

The *Species* are,

1. ALYSSUM *caulibus fruteſcentibus paniculatis foliis lanceolatis undulatis integris. Prod. Leyd.* 331. Madwort with Shrubby Stalks, Flowers growing in Panicles, and whole Spear-ſhaped waved Leaves.

2. ALYSSUM *foliis lanceolato-linearibus acutis integerrimis caulibus procumbentibus perennantibus. H. C.* Madwort with whole Spear-ſhaped pointed Leaves, and trai-perennial Stalks.

3. ALYSSUM *ramis ſenilibus ſpiniformibus nudis. H. C.* Madwort whoſe older Branches have naked Spines.

4. ALYSSUM *ramis ſuffruticoſis diffuſis foliis punctato echinatis. Hort. Upſal.* 185. Madwort with ſhrubby diffuſed Branches and Leaves, having prickly Punctures.

5. ALYSSUM *caule erecto foliis lanceolatis incanis integerrimis floribus corymboſis. Hort. Cliff.* 332. Madwort with an erect Stalk, hoary Spear-ſhaped Leaves which are entire, and Flowers collected into round Heads. Hoary ſhrubby Madwort.

6. ALYSSUM *caule erecto herbaceo ſiliculis ſeſſilibus ovalibus compreſſo planis petalis accuminatis. Lin. Sp. Plant.* 651. Madwort with an erect herbaceous Stalk, Pods growing cloſe to the Stalks, which are oval and compreſſed, and the Flower Leaves pointed.

7. ALYSSUM *caule herbaceo foliis lanceolatis dentatis ſiliculis inflatis. L. S. P.* 651. Madwort with an herbaceous Stalk, Spear-ſhaped indented Leaves, and ſwollen Seed Veſſels.

8. ALYSSUM *caule herbaceo erecto foliis incanis lanceolatis integerrimis ſiliculis inflatis. Lin. Sp. Plant.* 651. Madwort with an erect herbaceous Stalk, hoary Spear-ſhaped entire Leaves, and a ſwelling Seed Veſſel.

The 1ſt Sort is a low perennial Plant, with a thick, fleſhy Stem, which ſeldom riſes more than one Foot high, but divides into many leſs Branches which grow near the Ground; theſe are again divided into many ſmaller Branches, ſo that a ſingle Plant will ſpread to a conſiderable Diſtance, and form a large Buſhy head: The Branches are garniſhed with long Spear ſhaped Leaves, which are hoary and waved on their Edges; theſe are placed on without any Order, and continue through the Year. The Flowers are produced in looſe Panicles, at the extremity of every Branch, and are of a bright yellow Colour, conſiſting of four Petals, which are placed in Form of a Croſs; Theſe being numerous, make a fine

Appearance the latter End of *April*, or the beginning of *May*, and if the Seaſon is moderate, will continue three Weeks in Beauty. The Seeds ripen in *July*, but it is only from young Plants that Seeds can be expected; for the old Plants or thoſe raiſed from Slips or Cuttings, rarely produce Seeds in *England*. This Plant was found growing naturally in *Candia* by Dr. *Tournefort*, who ſent the Seeds to the Royal Garden at *Paris*, where they ſucceeded, and from thence the other Gardens of *Europe* have been furniſhed with it.

This Plant is hardy, and although brought from a more ſoutherly Climate, yet, if planted in a dry, lean, or rubbiſhy Soil, will endure our ſevereſt Winters abroad. It is increaſed by ſowing the Seeds in *March* in a light ſandy Soil, or by planting Cuttings in *April* or *May*; which are very apt to take Root, if kept ſhaded in the Heat of the Day, and gently refreſhed with Water.

The 2d Sort ſeldom continues above two or three Years with us, and muſt therefore be often ſown to preſerve it; or if the Seeds are ſuffered to fall, the Plants will riſe without any Trouble. This Plant ſpreads itſelf upon the Ground, and never riſes to any Height. It produces, at the Extremity of its Branches, very pretty Tufts of ſmall white Flowers; of which the Plant is ſeldom deſtitute for ſix or ſeven Months ſucceſſively, for which Reaſon it deſerves a Place in the Gardens of the Curious. This will alſo grow from Cuttings, if planted and managed as the former.

The 3d Sort hath ligneous Branches which riſe about two Feet high; theſe are armed with ſmall Spines; the Leaves are hoary, Spear-ſhaped and thinly placed on the Stalks without any Order. The Flowers are white, Croſs-ſhaped, and grow in ſmall Cluſters at the Extremity of the Branches. After the Flowers are paſt, the Germen turns to an oblong Seed Veſſel, containing ſeveral round Seeds.

This may be propagated in the ſame Manner as the 1ſt Sort, either by Seeds or Slips; and when the Plants grow in Rubbiſh, or on old Walls, they will laſt much longer, and endure the Cold of our Winters, better than thoſe which are in a good Soil. It grows naturally in *Spain*, *Italy*, and the South of *France*.

The 4th Sort hath trailing Branches which lie on the Ground; theſe are garniſhed with oblong hoary Leaves, which are rough to the Touch, and are placed alternately on every Side of the Branches; the Flowers are produced in ſmall Cluſters at the Extremity of the Branches, which are of a dark yellow Colour, and are ſucceeded by Seed Veſſels ſhaped like thoſe of the 3d Sort. This grows naturally upon Rocks and Ruins, in *Burgundy*, and ſome other Parts of *France*, as alſo about *Baſil*. It may be propagated in the ſame Manner as the former Sorts, and when it grows in Rubbiſh, the Plants will continue ſome Years; but in rich Ground, they ſeldom live through the Winter in *England*.

The 5th Sort grows to the Height of two Feet, having ligneous Stalks, which divide into ſeveral Branches toward the Top. Theſe are garniſhed with hoary Spear-ſhaped Leaves, placed alternately on the Branches: At the Extremity of every Shoot, the Flowers are produced in round Bunches, which are ſmall, white, and Croſs-ſhaped; theſe are ſucceeded by oval Seed Veſſels, which are full of brown Seeds. This Plant grows naturally in the South of *France*, *Spain*, and *Italy*, chiefly on rocky or gravelly Soils. When ſown in rich Soil it ſeldom ſurvives the Winter, but in Lime Rubbiſh, or upon old Walls, it will continue ſeveral Years. It flowers in *June*, *July*, *Auguſt*, and *September*, and the Seeds ripen ſoon after; which if permitted to ſcatter, the Plants will come up, and require little Care.

The 6th Sort is a biennial Plant, with an herbaceous Stalk, garniſhed with oblong hoary Leaves, placed alternately; the Flowers come out from the Wings of the Stalks ſingle, theſe grow very cloſe to the Stalk, and are ſucceeded by oval compreſſed Seed Veſſels, ſhaped like thoſe of the *Lunaria*, which contain many flat Seeds. This grows naturally in *Spain* and *Portugal*, from whence I have received the Seeds. It is propagated by Seeds, which muſt be ſown upon dry Ground, or Lime Rubbiſh; for in rich Land the Plants will grow too vigorous in Summer, and generally rot off and decay in Autumn.

The 7th Sort is a low ſpreading Plant, with a thick fleſhy Stalk, which divides into many ſmaller Branches; ſpreading near the Ground, and garniſhed with oblong hoary Leaves which continue through the Year: The Flowers are produced in ſmall Cluſters at the Extremity of the Branches; theſe are of a bright yellow Colour, conſiſting of four Petals placed in Form of a Croſs. After the Flower is paſt, the Germen becomes an oval ſwelling Seed Veſſel, filled with roundiſh Seeds. This Sort grows naturally in the Iſlands of the *Archipelago*, but is hardy enough to live in the open Air in *England*, in a dry Soil and a warm Situation. It is propagated by Seeds, and ſeldom laſts longer than two or three Years.

The 8th Sort grows more erect, having an herbaceous Stalk, which ſends out a few lateral Branches toward the Top, theſe are garniſhed with oblong hoary Leaves. The Flowers grow in ſmall Cluſters at the Extremity of the Branches; theſe are ſucceeded by oval ſwelling Seed Veſſels like the former. This Plant ſeldom continues longer than two Years in *England*; it muſt have a warm dry Situation, otherwiſe it will not live in the open Air. It is propagated by Seeds, which ſhould be ſown in *Auguſt*, ſoon after they are ripe; and if a few of them are potted in *October*, and ſheltered under a Frame in Winter, they will flower the following *June*, ſo good Seeds may be obtained the ſame Year; for thoſe Plants which ariſe early in the Year, grow luxuriantly in Summer, ſo do not often live through the Winter.

AMARANTHOIDES. *See* Gomphrena.

AMARANTHUS. Amaranth, or Flower-gentle.

The *Characters* are,

It hath male and female Flowers in the ſame Plant. The Flower hath no Petals, but the Empalement conſiſts of three or five pointed Spear-ſhaped Leaves which are coloured and permanent; this is common to both Sexes. The male Flowers have in ſome Species three, and in others five ſlender Stamina, which are of the ſame Length with the Empalement; theſe are crowned with oblong Summits. The Female Flowers have an oval Germen, ſupporting three ſhort Awl-ſhaped Styles, which are crowned with ſimple Stigma. The Empalement afterward becomes an oval coloured Seed Veſſel having one Cell, in which is lodged a ſingle globular Seed.

The *Species* are,

1. AMARANTHUS *capitellis triandris ſubrotundis amplexicaulibus foliis lanceolatis acuminatis. Lin. Sp. Plant.* 989.

989. Flower-gentle with roundiſh Heads, Flowers with three Stamina embracing the Stalks, and pointed Spear-ſhaped Leaves. *Amaranthus tricolor*, or three coloured.

2. AMARANTHUS *capitellis triandris ſubrotundis ſeſſilibus foliis lanceolatis ſparſis. Lin. Sp. Pl.* 989. Flower-gentle with three Stamina, roundiſh Heads growing cloſe to the Stalk, and Spear-ſhaped Leaves growing thinly on the Stalks. *Amaranthus bicolor.*

3. AMARANTHUS *capitellis triandris ſubrotundis axillaribus ſpicâque glomeratâ terminali foliis ovato-cordatis petiolo brevioribus. Lin. Sp. Plant.* 989. Flower-gentle with three Stamina, roundiſh Heads growing from the Wings of the Stalks in roundiſh Spikes, and oval Heart-ſhaped Leaves with ſhort Foot Stalks.

4. AMARANTHUS *racemis pentandris cylindricis pendulus longiſſimis. Hort. Cliff.* 443. Flower-gentle with five Stamina and very long hanging cylindrical Spikes, commonly called, *Love lies a bleeding.*

5. AMARANTHUS *racemis cylindricis pendulis, caule erecto arboreo.* Flower-gentle with hanging cylindrical Spikes, and an erect Tree like Stalk. Tree *Amaranthus.*

6. AMARANTHUS *ſpicis triandris erectis conglomeratis foliis ovatis retuſis. Lin. Sp. Plant.* 990. Flower-gentle with erect Spikes growing cloſe, and oval blunt Leaves.

7. AMARANTHUS *ſpicis cylindricis brevibus foliis ovato lanceolatis petiolis longiſſimis.* Flower-gentle with ſhort cylindrical Spikes, and oval Spear-ſhaped Leaves with very long Foot Stalks.

8. AMARANTHUS *floribus glomeratis lateralibus foliis ovatis retuſis caule diffuſo. Lin. Sp. Plant.* 990. Flower-gentle with Flowers collected in ſmall Heads at the Joints of the Stalks, oval blunt Leaves, and ſcattering Stalks. The ſmaller white Blite.

9. AMARANTHUS *floribus triandris conglomeratis axillaribus foliis lanceolatis obtuſis. Lin. Sp. Plant.* 990. Flower-gentle with Flowers having three Stamina, which grow in Cluſters from the Wings of the Stalks, and blunt Spear-ſhaped Leaves. Pellitory leaved Blite.

10. AMARANTHUS *racemis pentandris cylindricis horizontalibus caule inermi. Lin. Sp. Plant.* 990. Flower-gentle with five Stamina, cylindrical Spikes growing horizontally, and a ſmooth Stalk. Wild *New England* Blite with green Spikes.

11. AMARANTHUS *racemis pentandris cylindricis erectis caule inermi. Hort. Cliff.* 444. Flower-gentle with five Stamina, erect cylindrical Spikes, and a ſmooth Stalk. Purple Flower-gentle.

12. AMARANTHUS *racemis pentandris cylindricis erectis axillis ſpinoſis. Hort. Cliff.* 444. Flower-gentle with five Stamina, upright cylindrical Spikes and Spines at the Joints of the Stalks.

13. AMARANTHUS *racemis cylindricis lateralibus terminalibuſque cruciatim poſitis. Flant.* 22. Flower-gentle with cylindrical Spikes placed croſsways.

14. AMARANTHUS *racemis pentandris lateralibus terminalibuſque caule flexuoſo ramis retrocurvatis. Lin. Sp. Pl.* 991. Flower-gentle with five Stamina, Spikes proceeding from the Wings of the Stalks, and alſo at their Extremities, and flexible recurved Branches.

The 1ſt Sort has been long cultivated in Gardens for the Beauty of its variegated Leaves, which are of three Colours, *viz.* Green, Yellow, and Red, theſe are very elegantly mixed; And when the Plants are in full Vigour, the Leaves are large, and cloſely ſet from the Bottom to the Top of the Stalks, and the Branches form a Sort of Pyramid; ſo that there is not a more beautiful Plant than this, when it is in full Luſtre. I have raiſed them to more than five Feet high, branching out on every Side, from the Ground upward, and forming regular Pyramids; the Branches were garniſhed with Leaves their whole Length, which were large and finely coloured, and in warm Summers, have continued in Beauty two Months, during which Time there was not any Plant to be compared with them. From the Leaves of this Plant being party coloured, like the Feathers of Parrots, ſome Botaniſts have ſeparated this Species from the others, and conſtituted a Genus of it, by the Title of *Pſittacus.*

The 2d Sort hath been introduced into the *Engliſh* Gardens much later than the former. This grows to the ſame Height, and in the Manner of its Growth greatly reſembles it; but the Leaves have only two Colours, which are an obſcure Purple, and a bright Crimſon; theſe are ſo blended as to ſet off each other, and when the Plants are vigorous, they make a fine Appearance.

The 3d Sort hath no great Beauty; it grows about three Feet high with an upright Stalk, which ſends out ſome lateral Branches toward the Top; theſe are garniſhed with oval Heart-ſhaped Leaves. The Flowers are produced at the Wings of the Stalks in roundiſh Spikes, as alſo at the Extremity of the Branches, but have very little Beauty, ſo do not deſerve a Place in the Flower Garden. The young Plants of this Sort are gathered to boil inſtead of Spinach by the Inhabitants of *India*, where it grows naturally, and from thence I received the Seeds of it as an eſculent Plant.

The 4th Sort grows naturally in *America*, from whence I received the Seeds: This grows with an upright Stem, upward of three Feet high; the Leaves and Stalks are of a pale green Colour; the Spikes of Flowers are produced from the Wings of the Stalks, and in Cluſters at the Extremity of the Branches: They are very long and hang downward, of a bright purple Colour. I have meaſured ſome of the Spikes, which were two Feet and a Half long, ſo that many of them reached the Ground.

The 5th Sort hath a ſtrong Stem, which riſes to the Height of ſeven or eight Feet, ſending forth many horizontal Branches toward the Top; theſe are garniſhed with oblong rough green Leaves. At the Extremity of every Shoot, the cylindrical Spikes of a purple Colour are produced which hang downward, but theſe are ſeldom half the Length of thoſe of the former Sort, and are much thicker. This is the Sort of Amaranth, which is directed by the College to be uſed in Medicine.

The 6th Sort grows near three Feet high, putting out ſeveral Side Branches, which are garniſhed with oval blunt Leaves; at the Ends of the Branches, the Spikes are produced in Cluſters and grow erect, theſe are of a deep purple Colour.

The 7th Sort grows near four Feet high, the Stalks are inclining to Red, the Leaves are of an oval Spear-ſhaped Figure, green Colour, marked with purple Spots, and have very long Foot Stalks. The Spikes come out at the Extremity of the Branches in Cluſters, as alſo from the Wings of the Stalks; theſe are of a pale green Colour, and grow erect. I have received the Seeds of this Sort from *Portugal*, by the Title of *Bredos*, recommending it to be cultivated as a culinary Herb: And alſo from *America*, by the Title of *Cururu*, or *Caterpillar*, and recommended for the ſame Purpoſe; but upon Trial, I found it greatly inferior to Spinach, and other Herbs which we have here in Plenty. Therefore however uſeful it may be to the Inhabitants of thoſe warm Countries, where many of our common Vegetables will not thrive, it is not worth the Trouble of cultivating in *England*, eſpecially as it is only in the Summer Months that the Plants will come up in the full Ground. There are two or three more Species of this Genus, which grow naturally in the *Weſt Indies*, and are uſed for the ſame Purpoſe, under the ſame Appellation of *Caterpiller*, *Cururu*, *&c.* Of theſe I have frequently received Seeds from thence.

The 8th Sort grows naturally in moſt of the warm Parts of *Europe*, and alſo in *America*; for wherever it is permitted to ſcatter its Seeds, the Plants will come up the following Summer, and become troubleſome Weeds, as will alſo the 9th Sort; ſo theſe are ſeldom cultivated, as they are only preſerved in Botanic Gardens for Variety. The Stalks of both theſe ſpread on the Ground.

The 10th Sort grows upward of three Feet high, and ſends out many Side Branches; theſe are hairy, and garniſhed with oblong rough Leaves. The Spikes are produced from the Wings of the Stalks, as alſo at the Extremity of the Branches, growing horizontally, and are of a green Colour. There is little Beauty in this Plant, therefore it is ſeldom admitted to Gardens.

The 11th Sort has been long in *England*, and was formerly propagated in Flower Gardens, but is now become a common Weed, frequently growing upon Dunghills: For as the Plants abound with Seeds, ſo where they are permitted to ſcatter, Plenty of the Plants will come up the following Summer. Theſe Seeds will remain in the Ground ſeveral Years, and as often as they are turned up to the Surface, they will produce Plants; ſo that when Plants are ſuffered to ſtand till their Seeds fall, there will be every Summer freſh Crops for ſeveral Years.

The 12th Sort grows about two Feet high, putting out many Side Branches, ſo as to form a buſhy Plant; the Leaves are oblong, and the Spikes come out at every Joint, where the Stalks are armed with ſharp Prickles; and at the Extremity of the Branches, the Spikes are longer than thoſe of the Side: Theſe are ſlender, and are inclining to a brown Colour, ſo make no great Figure, therefore is rarely allowed to have a Place in Gardens.

The Seeds of the 13th Sort were ſent me from the *Bahama Iſlands*, as an eſculent Plant, bearing fine Flowers. This grows three Feet high, with purple Stalks and Leaves; the Spikes are ſhort and cylindrical; theſe are frequently produced from the Wings of the Stalks, but at the Extremity of the Stalk ariſes a large Cluſter of Spikes which are placed croſswiſe, with one upright Spike in the Middle. Theſe are of a bright purple Colour at firſt, but afterward change to a darker Colour, as the Seeds ripen.

The 14th Sort is a Native of *North America*, from whence the Seeds were ſent to *Europe*, but is now become a common Weed in many Gardens near *London*, ſo is ſeldom allowed a Place, except in Botanic Gardens.

The Sorts which are worthy of a Place in the Pleaſure Garden, are particularly the 1ſt and 2d. Theſe are tender, and require ſome Art and Care to bring them to any perfection in *England*, therefore their Management will be hereafter more particularly inſerted.

Next to theſe are the 4th, 5th, and 13th Sorts. The Seeds of theſe ſhould be ſown upon a moderate hot Bed toward the End of *March*, and when the Plants come up, they ſhould have a large Share of Air admitted to them in mild Weather, to prevent their drawing up weak. When they are large enough to tranſplant there ſhould be another moderate hot Bed provided, to which they ſhould be removed, placing them at ſix Inches Diſtance every Way, obſerving to water them, as alſo to ſhade them from the Sun until they have taken new Root, after which the Air ſhould be freely admitted to them, at all times when the Weather is favourable; their Waterings ſhould be frequent, but not given in greater Quantities. As the Plants advance, and the Warmth of the Seaſon increaſes, they ſhould have a greater Share of Air, that by Degrees they may be hardened to bear the open Air. Toward the end of *June* they may be taken up with large Balls of Earth to their Roots, and planted ſome into Pots, and others into the Borders of the Pleaſure Garden, obſerving to ſhade them until they have taken good Root; after which they muſt be frequently watered in dry Weather, eſpecially thoſe in the Pots, for theſe will require Watering every Evening in warm dry Weather. The 5th Sort will not thrive in Pots, ſo ſhould be planted in a rich light Soil, where if it is allowed Room, and plentifully watered in dry Weather, the Plants will grow to a very large Size, and make a fine Appearance.

The 12th Sort is alſo tender, ſo whoever is inclinable to cultivate that Plant, ſhould treat it in the ſame Manner as is directed for the former.

The other Sorts are hardy enough to grow in the open Air, ſo may be ſown on a Bed of light Earth in the Spring, and when the Plants are fit to remove, they may be tranſplanted into any Part of the Garden, where they will thrive, and produce Plenty of Seeds, which, if permitted to ſcatter, will ſtock the Garden with Plants.

I ſhall now proceed to the Culture of the moſt valuable Kinds, which are more generally cultivated in Gardens for their Beauty: *Viz.* the 1ſt and 2d Sorts.

Theſe two Sorts of Amaranths muſt be ſown on a good hot Bed in *February*, or the beginning of *March* at fartheſt; and in about a Fortnight's Time, if the Bed is in good Temper, the Plants will riſe; when you muſt prepare another hot Bed, covered with good rich light Earth, about four Inches thick; then raiſe up the young Plants with your Finger, ſo as not to break off the tender Roots, and prick them into your new hot Bed about four Inches diſtant every Way, giving them a gentle Watering to ſettle the Earth to their Roots; but in doing this be very cautious not to bear the young Plants down to the Ground by haſty Watering, which rarely riſe again, or at leaſt ſo as to recover their former Strength in a long Time, but very often rot in the Stems and die quite away.

In the Middle of the Day keep them ſcreened with Mats from the great Heat of the Sun, and give them Air by raiſing up the Glaſſes with a ſmall Stone; and, if the Glaſſes are wet, it will be proper to turn them every Day, in good Weather, that they may dry; for the Moiſture which is occaſioned by the Fermentation of the Dung, and Perſpiration of the Plants, is of a noxious Quality, and very unkindly to Plants; ſo that if the Weather happens to prove bad, that you cannot turn your Glaſſes, it will be of great Service to your Plants to wipe off all the Moiſture two or three Times a Day with a woollen Cloth, to prevent its dropping on the Plants. When they are firmly rooted and begin to grow, you muſt give them Air every Day, more or leſs, as the Weather is cold or hot, to prevent their drawing up too faſt, which greatly weakens their Stems.

In about three Weeks or a Month, theſe Plants will have grown ſo as to meet, and will ſtand in need of another hot Bed, which ſhould be of a moderate Temper, and covered with the ſame rich Earth about ſix Inches thick, in which they ſhould be remov'ed, obſerving to take them up with as much Earth about their Roots as poſſible, and plant them ſeven or eight Inches Diſtance every Way, giving them ſome Water to ſettle the Earth about their Roots; but be very careful not to water them heavily, ſo as to bear down the Plants, as before directed; and keep them ſhaded in the Heat of the Day, until they have taken freſh Roots; be ſure to refreſh them often gently with Water, and give them Air in Proportion to the Heat of the Weather, covering the Glaſſes with Mats every Night, leſt the Cold chill your Beds, and ſtop the Growth of the Plants.

In the Beginning of *May* you muſt provide another hot Bed, which ſhould be covered with a deep Frame, that your Plants may have room to grow. Upon this hot Bed you muſt ſet as many Three-penny Pots as can ſtand within the Campaſs of the Frame; theſe Pots muſt be filled with good rich Earth, and the Cavities between each Pot filled up with any common Earth, to prevent the Heat of the Bed from evaporating, and filling the Frame with noxious Steams; then with a Trowel, or ſome ſuch Inſtrument, take up your Plants from the former hot Bed, with as much Earth as poſſible to the Roots, and place each ſingle Plant in the Middle of one of the Pots, filling the Pot up with the Earth before deſcribed, and ſettle it cloſe to the Root of the Plant with your Hands; water them gently, as before, and ſhade them in the Heat of the Day from the Violence of the Sun, by covering the Glaſſes with Mats; refreſh them often with Water, and give them a good Quantity of Air in the Day-time.

In about three Weeks more theſe Plants will have grown to a conſiderable Size and Strength, ſo that you muſt now raiſe the Glaſſes very much in the Day-time; and when the Air is ſoft, and the Sun is clouded, draw off the Glaſſes, and expoſe them to the open Air, and repeat this as often as the Weather will permit; which will harden them by Degrees to be removed abroad into the Places where they are to remain the whole Seaſon; but it is not adviſeable to ſet theſe Plants out until a Week in *July*, obſerving to do it when the Air is perfectly ſoft, and in a gentle Shower of Rain.

Let them at firſt be ſet near the Shelter of a Hedge for two or three Days, where they may be ſcreened from the Violence of the Sun, and ſtrong Winds, to which they muſt be inured by Degrees. Theſe Plants, when grown to a good Stature, perſpire freely, and muſt be every Day refreſhed with Water, if the Weather proves hot and dry; otherwiſe they will ſtint, and never produce ſo large Leaves, as thoſe which are ſkilfully treated.

This is the proper Management, in order to have fine Amaranths; which, if rightly followed, and the Kinds are good, in a favourable Seaſon, will produce wonderful large fine Leaves, and are the greateſt Ornament to a good Garden for upwards of two Months.

When the Seaſon proves cold, theſe Plants ſhould be kept longer under the Glaſſes; and, if the Heat of the Bed is ſpent, there ſhould be a freſh Bed made, either in a Glaſs Caſe, or where ſuch a Conveniency is wanting, there may be one contrived by erecting ſome of the Lights which were placed over Cucumbers, round a hot Bed, and cover thoſe with the ſame Lights on the Top, ſo as to reſemble a Glaſs Stove. On this hot Bed you ſhould place your Amaranths, at ſuch a Diſtance from each other, as to allow them room to ſpread; obſerving to refreſh them often with Water, and in warm Weather let them have Plenty of freſh Air. With this Management the Plants may be raiſed five or ſix Feet high, and their Leaves will come to the moſt beautiful Colours; after which they may be expoſed to the open Air, and removed to adorn any Part of the Garden.

AMARANTHUS CRISTATUS or Cockſcomb; See *Celoſia.*

AMARYLLIS, Lily-daffodil.

The *Characters* are,

It hath an oblong compreſſed Spatha, or Sheath, which encloſes the Flower Buds, and opens Side Ways, grows dry, and is permanent; the Flower hath ſix Spear-ſhaped Petals; in the Center is ſituated the roundiſh furrowed Germen, ſupporting a ſlender Style, which is crowned with a three cornered Stigma; this is attended by ſix Awl-ſhaped Stamina, which are crowned with incumbent Summits. After the Flower is paſt, the Germen becomes an oval Capſule, opening in three Parts, having three Cells, which contain round Seeds.

The *Species* are,

1. AMARYLLIS *ſpathâ uniflorâ, corollâ æquali, ſtaminibus declinitis. Lin.* Lily Daffodil with a ſingle Flower in each Cover, which is equal, and declined Stamina. Yellow Autumnal Narciſſus.

2. AMARYLLIS *ſpathâ uniflorâ, corollâ æquali, piſtillo declinato. H. C.* Lily Daffodil with a ſingle Flower in each Sheath, which has equal Petals, and the Pointal declining. Commonly called *Atamuſco* Lily.

3. AMARYLLIS *ſpathâ uniflorâ, corollâ inæquali, genitalibus declinatis, H. C.* Lily Daffodil with one Flower in each Cover, which has unequal Petals, and the Stamina and Style are declined. *Jacobæa* Lily.

4. AMARYLLIS *ſpathâ multiflorâ, corollis revolutis genitalibus ſtrictis. H. Up.* Lily Daffodil with many Flowers in one Cover; the Petals equal, ſpread open, and turned backward, with broken Stamina, commonly called *Guernſey* Lily.

5. AMARYLLIS *ſpathâ multiflorâ, corollis campanulatis æqualibus, genitalibus declinatis. H. C.* Lily Daffodil with many Flowers in one Cover; the Petals equal and Bell-ſhaped, and the Stamina declined. *Belladonna* Lily.

6. AMARYLLIS *ſpathâ multiflorâ corollis campanulatis marginibus reflexis genitalibus declinatis.* Lily Daffodil with many Flowers in one Cover, the Petals equal and Bell-ſhaped, their Borders turning backward, and declining Stamina. *Mexican* Lily.

7. Amaryllis *ſpathâ multiflorâ, corollis campanulatis æqualibus, ſcapo compreſſo longitudini umbellæ. Flor. Leyd.* 36. Lily Daffodil with many Flowers in one Cover; the Petals equal, and the Cover compreſſed the Length of the Umbel. *African* Lily.

8. Amaryllis *ſpathâ multiflorâ, corollis campanulatis æqualibus, ſcapo tereti ancipiti. Flor. Leyd.* 36. Lily Daffodil with many Flowers in one Cover; the Petals equal, and the Cover opening two Ways. *Zeylon* Lily.

9. Amaryllis *ſpathâ multiflorâ, foliis ciliatis. Flor. Leyd.* 37. Lily Daffodil with many Flowers in one Cover, and the Edges of the Leaves hairy. *African* Scarlet Lily.

10. Amaryllis *ſpathâ uniflorâ, corollâ æquali, ſtaminibus erectis.* Lily Daffodil with one Flower in a Cover, with equal Petals, and erect Stamina. Spring yellow Lily Narciſſus.

11. Amaryllis *ſpathâ multiflorâ corollis inæqualibus foliis linguiformibus. Butn.* Lily Daffodil with many Flowers in a Cover, whoſe Petals are unequal, and Leaves ſhaped like a Tongue. *Brunſwigia* of Dr. *Heiſter.*

12. Amaryllis *ſpathâ triflorâ corollis campanulatis æqualibus genitalibus declinatis.* Lily Daffodil with three Flowers in each Cover, whoſe Petals are equal and Bell-ſhaped, with declining Stamina.

The 1ſt Sort is a very hardy Plant, which increaſes very faſt by Offſets. The Seaſon for tranſplanting theſe Roots is any time from *May* to the End of *July*, when their Leaves are decayed, after which it will be too late to remove them; for they will begin to puſh out new Fibres by the Middle of *Auguſt*, if the Seaſon be moiſt, and many times they flower the Beginning of *September*; ſo that if they are then tranſplanted, it will ſpoil their flowering. This Plant will grow in any Soil or Situation; but it will thrive beſt in a freſh light dry Soil, and in an open Situation; *i. e.* not under the Dripping of Trees, nor too near to Walls. It is commonly called by the Gardeners, the yellow Autumnal Narciſſus, &c. and is uſually ſold by them with *Colchicums*, for Autumnal Ornaments to Gardens; for which Purpoſe this is a pretty Plant, as it will frequently keep flowering from the Middle of *September* to the Middle of *November*, provided the Froſt is not ſo ſevere as to deſtroy the Flowers; for although there is but one Flower in each Cover, yet there is a Succeſſion of Flowers from the ſame Root, eſpecially when they are ſuffered to remain three or four Years unremoved. The Flowers ſeldom riſe above three or four Inches high; it is ſhaped ſomewhat like the Flowers of the large yellow Crocus; theſe have their green Leaves come up at the ſame Time, like the Saffron, and after the Flowers are paſt, the Leaves increaſe all the Winter. The Roots are bulbous, and ſhaped like thoſe of the Narciſſus, ſo are proper Ornaments for ſuch Borders as are planted with Cyclamens, Saffron, Autumnal Crocus, Colchicums, and ſuch low Autumnal Flowers.

The 10th Sort is more rare in *England* than any of the other, at preſent. It was formerly in ſeveral curious Gardens, but as it flowers at a Seaſon when there are ſo many finer Sorts in Beauty; ſo it was neglected and caſt out of the Gardens, whereby it is almoſt loſt in *England*: It grows naturally in *Spain* and *Portugal*, where it flowers early in *January*. This is as hardy as the 1ſt Sort, and may be planted in the open Borders, and treated in the ſame manner as the 1ſt, excepting that this will not loſe its Leaves ſo ſoon, ſo ſhould not be taken out of the Ground to tranſplant, till the End of *July*, or Beginning of *Auguſt*. It flowers in *April* or the Beginning of *May*, but is not of long Duration.

The 2d Sort is a Native of *Virginia* and *Carolina*, in which Countries it grows very plentifully in the Fields and Woods, where its Flowers make a beautiful Appearance in the Spring. The Flowers of this Sort are produced ſingle, and at their firſt Appearance have a fine Carnation Colour on their Outſide; but this fades away to a pale, or almoſt white, before the Flowers decay. This Plant is ſo hardy, as to thrive in the open Air in *England*, provided the Roots are planted in a warm Situation, and on a dry Soil; it may be propagated by Offſets from the Roots, which they put out pretty plentifully, eſpecially if they are not tranſplanted oftener than once in three Years. The Flowers of this Sort are almoſt as large as thoſe of the ſmall Orange Lily, but do not grow above ſix or eight Inches high; they appear the latter End of *May*, or Beginning of *June*, and ſometimes it flowers in *Auguſt* in this Country.

The 3d Sort, which is commonly called *Jacobæa* Lily, is now become pretty common in the curious Gardens in *England*, the Roots ſending forth Plenty of Offſets, eſpecially when they are kept in a moderate Warmth in Winter: for the Roots of this Kind will live in a good Green-houſe, or may be preſerved thro' the Winter under a common hot Bed frame; but then they will not flower ſo often, nor ſend out ſo many Offſets, as when they are placed in a moderate Stove in Winter. This Sort will produce its Flowers two or three times in a Year, and is not regular to any Seaſon; but from *March* to the Beginning of *September*, the Flowers will be produced when the Roots are in Vigour. The Stems of theſe Flowers are produced from the Sides of the Bulbs, ſo that after the Flowers produced on one Side are decayed, there is another Stalk ariſes from the other Side of the Bulbs; but there is rarely more than one Flower produced on the ſame Stalk. Theſe Flowers are large, and of a very deep Red; the under Petals, or Flower Leaves, are very large, and the whole Flower ſtands nodding on one Side of the Stalk, making a beautiful Appearance. This ſhould be called the *Mexican* Lily, rather than the other, ſo named by the Gardeners; this being a Native of *Mexico*, whereas the other is common to all the Iſlands in the *Weſt-Indies*.

It is propagated by Offſets, which may be taken off every Year; the beſt time to ſhift and part theſe Roots is in *Auguſt*, that they may take good Root before Winter; in doing of this, there ſhould be care taken not to break off the Fibres from their Roots. They ſhould be planted in Pots of a middling Size, filled with light Kitchen Garden Earth; and if they are kept in a moderate Degree of Warmth, they will produce their Flowers in Plenty, and the Roots will make great Increaſe.

The 6th Sort, which is commonly called the *Mexican* Lily, is not quite ſo hardy as the former Sort, ſo muſt be placed in a warm Stove; and if the Pots are plunged into a hot Bed of Tanners Bark, the Roots will thrive better, and the Flowers will be ſtrong. This Sort is increaſed by Offſets, as the others of this Tribe;

and it flowers uſually the Beginning of Spring, when it makes a fine Appearance in the Stove ; the Flower Stems of this Sort, ſeldom riſe more than one Foot high, each Stem ſupports two, three, or four Flowers, rarely more than that Number. The Flowers are large, and of a bright Copper Colour, inclining to red, the Spatha, or Sheath, which covers the Buds before they open, divides into two Parts to the Bottom, ſtanding on each Side the Umbel of Flowers, joined to the ſmall Foot Stalks. This doth not produce Seeds in *England*.

The 8th Sort is alſo tender, and muſt be treated in the ſame manner as the 6th ; this is more common in the Gardens in *Holland* than in this Country ; and as it is a Plant which increaſes but ſlowly, will not be very common here. This flowers uſually in *June* and *July* ; and ſometimes the ſame Root will flower again in Autumn ; for if the Pots are plunged in a Bed of Tanners Bark, the Roots generally flower twice evrey Year, but the Flowers are not of long Duration. This Sort grows naturally in the *Weſt-Indies*, from whence I have received the Roots and Seeds.

The 7th and 9th Sorts are more hardy, and may be treated in the ſame manner as the *Jacobæa* Lily ; theſe will increaſe pretty faſt by Offsets, when properly managed, eſpecially the 9th, which ſends out many Offsets, ſo as to fill the Pots with Roots, but it ſeldom flowers in *England*. The Leaves of this are long and narrow, not much unlike thoſe of the Snowdrop. The Petals of the Flower turn back like thoſe of the *Guernſey* Lily, but are of a lighter Colour, rather inclining to Scarlet ; the Roots are ſmall. The 7th Sort uſually flowers in Winter, if the Pots are placed in a moderate Stove ; and as at that Seaſon there are few Flowers in the open Air, ſo theſe are the more valuable.

I received Roots of both theſe Sorts from the *Cape of Good Hope*, which have ſucceeded in the *Chelſea* Garden. The 7th Sort produces a great Number of Flowers in each Umbel, of a deep purple Colour, but the Stalk which ſupports them, rarely riſes more than three Inches high ; theſe Flowers appear in *December*. The Roots are very large, and the Leaves very long, but narrow.

The 11th Sort is figured by *Ferrarius* in his Garden of Flowers, as alſo by *Morriſon* in his Hiſtory of Plants ; but Dr. *Heiſter* has ſeparated this from the Genus, and has conſtituted a new Genus by the Title of *Brunſwigia*, in honour to the Duke of *Brunſwick*. But although the Shape of the Flowers in this Plant are different from moſt of the others of this Genus, yet as there is a Uniformity in the characteriſtic Notes of the Genus, ſo it ſhould not be ſeparated ; for the *Jacobæa* Lily differs in the Form of its Flowers, from the other Species, full as much as this, therefore might for the ſame reaſon be ſeparated from this Genus.

This grows naturally at the *Cape of good Hope*, from whence I received the Roots, which have ſucceeded in the *Chelſea* Garden. The Bulbs are large and almoſt round ; the Leaves long, broad, and rounded at their Extremities ; theſe ſpread two Ways on the Surface of the Ground ; and come up after the Flower Stem appears, which is generally in *November* ; after the Flowers are paſt, the Leaves increaſe till Spring, and in *May* they begin to decay, ſo that from the Middle of *June* to *October*, the Roots are entirely naked of Leaves.

The 12th Sort is alſo a Native of *Africa*, I received the Roots of this from the *Cape of Good Hope* with the former. This produces its Flowers in *February* and *March*. The Stems riſe near two Feet high, and have commonly but three Flowers incloſed in each Sheath, or Cover. The Flowers are as large as thoſe of the *Belladonna* Lily, and are of the ſame Form growing erect, but of a deeper red Colour ; the Leaves are long and narrow, and have a hollow Furrow on their upper Side, where there is a pale Stripe running the Length of the Leaves, and are very like thoſe of the *American Pancratium*. Theſe Leaves decay in Summer, as thoſe of the former, and appear again at the ſame Seaſon.

Both theſe Sorts may be treated in the ſame manner, as hath been directed for the *Jacobæa* Lily, with this Difference only, of placing theſe in Winter in a Stove, where there is a moderate Share of Warmth, for the Roots of theſe will not endure ſo much cold as thoſe, nor ſhould they have ſo much Water given them.

The beſt Time to tranſplant theſe Roots is about the Beginning of *Auguſt*, when their Leaves are quite decayed, and before they put out new Fibres, for it will be very improper to remove them afterwards.

All theſe bulbous-rooted Flowers delight in a looſe ſandy Earth, mixed with good Kitchen Garden Mould ; and require but little Water when their Leaves decay, and the Roots are not in a growing State ; for much Moiſture at that time will often cauſe them to rot ; but when they are growing, and putting out their Flower Stems, they ſhould be frequently refreſhed with Water, but not given in too great Quantities at a time. The Pots, with the tender Sorts, ſhould conſtantly be kept in the Stove ; and in Summer they ſhould have as much free Air as poſſible ; for although ſome of theſe Sorts may be kept abroad in Summer, yet they do not thrive ſo well, nor flower ſo conſtantly, as thoſe which are treated in the manner here deſcribed.

The 5th Sort, which is called the *Belladonna* Lily, was brought to *England* from *Portugal*, where the Gardens did ſome Years ago abound with theſe Flowers ; for the Roots increaſe very faſt, eſpecially in ſuch Countries where they live in the open Air. The Gardens in *Italy* have alſo great Quantities of theſe Flowers, eſpecially about *Florence* ; where, at the Seaſon of their flowering, they are commonly ſold in the Markets to adorn their Rooms ; the *Italians* call it *Narciſſus Belladonna*. This Plant thrives ſo well in *Italy*, as to need no other Culture than the common Lily ; and although it does not flower untill *Auguſt*, yet it commonly produces good Seeds in that Country, from which they propagate them in great Plenty ; but with us they require more Care, otherwiſe they cannot be preſerved. The Roots of this Sort were generally planted in Pots, and placed under a hot Bed Frame, to ſcreen them from the Froſt in Winter ; for as their green Leaves come out in Autumn, and continue growing all the Winter, ſo when they are expoſed to the Froſt, whereby their Leaves are killed, the Roots will be in Danger of periſhing, but if they ſhould ſurvive, they will be greatly weakened by it. With this Culture the Roots were preſerved, but they did not conſtantly flower, nor increaſe in Offsets very faſt, ſo that few Gardens were furniſhed with this Plant ; and of late Years the Roots have been very ſcarce in *Portugal*, for the *Jacobæa* Lily having been introduced into that Country, has ſupplanted the other, in moſt of their Gardens, ſo that the Roots which have been brought from thence of late Years for the *Belladonna* Lily, have proved the *Jacobæa* Lily.

The method in which I have cultivated this Plant for ſome Years paſt, with great Succeſs, is as follows. I prepared a Border next a South Weſt aſpected Wall, of about ſix Feet wide, in the following Manner, *viz.* I removed all the Earth to the Depth of three Feet, then I put ſome very rotten Dung in the Bottom, ſix Inches thick, upon which I laid light Garden Mould about twenty Inches deep; after making this level, I placed the Roots at ſix Inches Diſtance every Way, and then covered them over with light ſandy Earth, to the Height of the Border, whereby the upper Part of the Roots were five or ſix Inches buried, and in the Winter I covered the Border all over with rotten Tanners Bark, three Inches deep, to prevent the Froſts from penetrating the Ground; and when the Froſt was very ſevere, I laid ſome Mats or Straw over the Leaves to protect them from being killed. With this Management the Roots have greatly increaſed, and have conſtantly flowered every Year; ſome of them have put out two or three Stems, which grew near three Feet high, and produced many Flowers in each Umbel, which have made a fine Appearance during the Month of *October*. This Plant produces its Flowers in *October*, and the green Leaves come up ſoon after, and abide all the Winter and Spring until *June*, at which Time they decay; ſoon after which the Roots ſhould be tranſplanted, for if they are let ſtand till *July*, they will have ſent forth new Fibres, when it will greatly injure the Roots, if they are diſturbed. If ſome of theſe Roots are planted in a warm Border, cloſe to a South Wall, and on a dry Soil, they will thrive very well, eſpecially if they are covered in ſevere Froſt; and theſe Roots will flower much ſtronger than thoſe which are kept in Pots, and will multiply faſter.

The 4th Sort is ſuppoſed to come originally from *Japan*, but has been many Years cultivated in the Gardens of *Guernſey* and *Jerſey*; in both which Places, they ſeem to thrive as well as in their native Country; from thoſe Iſlands their Roots are ſent annually to the Curious in moſt Parts of *Europe*, and are commonly called *Guernſey* Lilies. The Roots of this Plant are generally brought over in *July* or *Auguſt*; but the ſooner they are taken out of the Ground after their Leaves decay, they are the better: For although the Roots which are taken up when their Flower Stems begin to appear, will flower, yet their Flowers will not be ſo large, nor will their Roots be near ſo good after, as thoſe which were removed before they had ſent out freſh Fibres.

When theſe Roots come over, they ſhould be planted in Pots filled with freſh light ſandy Earth, mixed with a little very rotten Dung, and placed in a warm Situation, obſerving now and then to refreſh the Earth with Water: But by no Means let them have too much Wet, which would rot their Roots, eſpecially before they come up. About the Middle or End of *September*, ſuch of the Roots as are ſtrong enough to flower, will begin to ſhew the Bud of their Flower Stem (which is commonly of a red Colour); therefore you ſhould remove thoſe Pots into a Situation where they may have the full Benefit of the Sun, and may be ſheltered from ſtrong Winds: but by no Means place them too near a Wall, nor under Glaſſes, which would draw them up weak, and render them leſs beautiful. At this Seaſon they ſhould be gently refreſhed with Water, if the Weather be warm and dry; but if it ſhould prove very wet, they ſhould be ſcreened from it.

When the Flowers begin to open, the Pots ſhould be removed under ſhelter, to prevent the Flowers from being injured by two much Wet: But they muſt not be kept too cloſe, nor placed in a Situation too warm, which would occaſion their Colours to be leſs lively, and haſten their Decay. The Flowers of this Plant will continue in Beauty (if rightly managed) a full Month: and though they have no Scent, yet, for the Richneſs of their Colour, they are juſtly eſteemed in the firſt Rank of the flowery Race.

After the Flowers are decayed, the green Leaves will begin to ſhoot forth in Length, and if ſheltered from ſevere Cold will continue growing all the Winter; but they muſt have as much free Air as poſſible in mild Weather and be covered only in great Rains or Froſts; for which Purpoſe a common hot Bed Frame is the propereſt Shelter for them; under which if they are placed, the Glaſſes may be taken off conſtantly every Day in dry open Weather, which will encourage the Leaves to grow ſtrong and broad; whereas when they are placed in a Green-houſe, or not expoſed to the open Air, they will grow long and ſlender, and have a pale weak Aſpect, whereby the Roots will become weak, ſo that it ſeldom happens that they produce Flowers under ſuch Management.

Theſe Roots ſhould be tranſplanted every fourth or fifth Year toward the latter End of *June*, or beginning of *July*, and planted into freſh Earth (but they ſhould not be oftener removed, for that would retard their flowering). The Offsets ſhould alſo be taken off, and planted into ſeveral Pots, which in three Years Time, will produce Flowers; ſo that after a Perſon is once ſtocked with theſe Roots, they may increaſe them, ſo as to have a Supply of blowing Roots, without being at the Trouble or Expence of ſending to *Guernſey* every Year for freſh Roots; and the Roots preſerved here will flower ſtronger than thoſe which are uſually brought from thence, for the Inhabitants of thoſe Iſlands are not very curious in cultivating theſe Roots: Their uſual Method is to plant them at a great Diſtance in a Bed of common Earth, where they let them remain for many Years: In which Time they produce ſuch a Number of Offsets, that many Times one ſingle Cluſter has contained above a hundred Roots; by which Means, thoſe which grow on the Inſide are ſo much compreſſed by the outer Roots, that they are perfectly flatted; and from the Number of Roots growing in each Cluſter, they are all rendered weak, and unfit to produce ſuch large Stems of Flowers, as thoſe which have grown ſingle, and are of a ſpherical Figure.

But when a Perſon is poſſeſſed of a large Number of theſe Roots, it will be troubleſome to preſerve them in Pots, therefore there ſhould be a Bed prepared of the following Earth, in ſome well ſheltered Part of the Garden, *viz.* Take a third Part of freſh Virgin Earth from a Paſture Ground, which is light, then put near an equal

Part of Sea Sand, to which you ſhould add rotten Dung, and ſifted Lime Rubbiſh, of each an equal Quantity. With this Earth (when well mixed and incorporated) you ſhould make your Bed about two Feet thick, raiſing it about four or five Inches above the Surface of the Ground, if the Situation be dry; but if the Ground be wet, it ſhould be raiſed eight or nine Inches higher. In this Bed, about the Beginning of *July*, plant the Roots about ſix or eight Inches aſunder each Way; and in Winter, when the Froſt begins, you ſhould either cover the Bed with a Frame, or arch it over, and cover it with Mats and Straw, to prevent their Leaves from being pinched with Cold; but in Spring the Covering may be entirely removed, and the Bed kept conſtantly clear from Weeds, during the Summer, obſerving to ſtir the Surface of the Earth now and then; every Year, when the Leaves are decayed, you ſhould ſift a little freſh Earth over the Beds, to encourage the Roots. In this Bed the Roots may remain until they are ſtrong enough to produce Flowers, when they may be taken up and planted in Pots, as was before directed, or ſuffered to remain in the ſame Bed to flower.

The Roots of theſe Plants do not flower again the ſucceeding Year (as in many other Sorts of Bulbs); but if their Bulbs contain two Buds in their Center, as is often the Caſe, they often flower twice within the Compaſs of three Years; after which, the ſame Root does not flower again in ſeveral Years, only the Offsets from it.

AMBROSIA.

The *Characters* are,

It hath male and female Flowers on the ſame Plant. The male Flowers are compoſed of many Florets, which are included in one common Empalement of one Leaf, which is plain and extended the Length of the Florets: Each Floret is of one Leaf, Funnel-ſhaped and cut into five Parts at the Brim; in the Center is ſituated the five ſmall Stamina, which are crowned with pointed erect Summits. The female Flowers are placed under the male in the ſame Spike, theſe have an Empalement of one Leaf, which is pointed and permanent: They have no Petals, but an oval Germen placed in the Bottom of the Empalement, ſupporting a ſlender Style, crowned with two long hairy Stigma. The Germen afterward becomes an oval hard Capſule with one Cell, crowned with the acute Segments of the Empalement, and incloſing one roundiſh Seed.

The *Species* are,

1. AMBROSIA *foliis multifidis racemis ſolitariis piloſis. L. S. P.* Ambroſia with Leaves divided into many Parts, and ſingle hairy Spikes of Flowers. Sea Ambroſia.

2. AMBROSIA *foliis bipinnatifidis, racemis paniculatis terminalibus glabris. Hort. Upſal.* 214. Ambroſia with double winged Leaves, a ſmooth looſe Spike of Flowers growing at the extremity of the Branches. Tall unſavoury Sea Ambroſia with Mugwort Leaves.

3. AMBROSIA *foliis trilobis & quinquelobis ſerratis.* Ambroſia with Leaves having three and five Lobes, which are ſawed on their Edges. Largeſt *Virginian* Ambroſia, with an Eaſtern Plane Tree Leaf.

4. AMBROSIA *foliis bipinnatifidis primoribus ramulorum indiviſis integerrimis. L. S. P.* Ambroſia with double winged Leaves, and the younger Branches having entire Leaves. Greateſt unſavoury Ambroſia of *Virginia* with Water Horehound Leaves, which are finely divided.

5. AMBROSIA *foliis pinnatifidis hirſutis racemis ſolitariis terminalibus, caule fruticoſo perenne i. e.* Ambroſia with hairy winged Leaves, ſingle Spikes of Flowers, growing at the Extremity of the Branches, and a ſhrubby perennial Stalk.

The 1ſt Sort grows naturally in the Eaſt, near the Sea Shore; this riſes about two Feet and a Half high, ſending out many Side Branches, which are garniſhed with Leaves divided into many Parts, and upon being handled emit a ſtrong Odour. The Spikes of Flowers are produced from the Wings of the Stalks, which are long, ſingle, and hairy; the upper Part being furniſhed with many male Flowers, and the lower Part with female Flowers; theſe grow cloſe to the Stalk. After the Flowers are paſt, the female Flowers are ſucceeded by hard leafy Capſules having one Cell, in which is included a ſingle round Seed. This is an annual Plant, which ſeldom perfects its Seeds in *England*, unleſs the Plants are brought forward in the Spring; therefore the Seeds ſhould be ſown in the Autumn in a warm Border, and when the Plants come up in the Spring, they ſhould be tranſplanted into another warm Border of poor Ground; for when theſe Plants are put into a rich moiſt Land, they grow very luxuriantly, ſo do not flower till late in the Seaſon, and ſeldom perfect their Seeds. Therefore the beſt Method to obtain good Seeds, is to plant ſome of the Plants in Lime Rubbiſh to prevent their luxuriant Growth, which will cauſe them to flower early, whereby good Seeds may be produced.

If the Seeds are permitted to ſcatter, the Plants will come up the following Spring without Care; for when the Seeds are ſown in the Spring, the Plants ſeldom come up the ſame Year, but the Seeds will remain in the Ground a Year before they vegetate. There is not much Beauty in this Plant, ſo it is not often admitted to a Place in Gardens, except where a Variety are preſerved.

The 2d Sort grows naturally in the Iſlands of *America*, as alſo in *Carolina* and *Virginia*; from the two latter Countries I have frequently received the Seeds, and in the Tubs of Earth which came with Plants from the former, this Plant hath come up in Plenty, ſo is undoubtedly a common Weed there. This Sort grows more than three Feet high, dividing into many Branches; theſe are garniſhed with winged Leaves in Shape like thoſe of Mugwort, which are without Odour; at the Extremity of each Branch, the looſe Spikes of Flowers are produced, compoſed of one long Spike in the Middle, and three or four ſhort lateral Spikes: Theſe are ſmooth, and have male and female Flowers ranged in the ſame Manner as the former; the female Flowers are ſucceeded by Seeds of the ſame Shape.

This Sort will come up and thrive in the open Air in *England*, but the Plants ſo raiſed will not produce good Seeds, unleſs the Seaſon is warm; therefore to obtain them every Year, it is neceſſary to cultivate them in the following Manner.

The Seeds ſhould be ſown on a moderate hot Bed in *March*, and when the Plants are come up two Inches high, they muſt be tranſplanted into another moderate hot Bed, allowing each Plant three or four Inches ſquare; obſerving to water them pretty well, and ſhade them until they have taken new Root; afterward they muſt have a large Share of freſh Air every Day, when the

Weather is warm, and frequent Waterings, for they are very thirſty Plants. When the Plants are grown pretty ſtrong, they muſt be taken up with Balls of Earth to their Roots, and planted in large Pots filled with rich light Earth ; and if they are placed on a very moderate hot Bed until they are well rooted, it will greatly forward their flowering. Toward the latter End of *May* they ſhould be placed abroad with other hardy annuals, among which they make a Variety. Theſe Plants flower in *July*, and their Seeds ripen in *September*.

The 3d Sort is a Native of *North America*, where it is a very common Weed. This often grows eight or ten Feet high ; and if it is planted in a rich moiſt Soil, or is often watered, it will grow much higher, and ſpread out into many Branches. The Seeds of this Plant, when ſown in the Spring, ſeldom come up the firſt Year, but frequently remain in the Ground until the following Spring ; ſo that when the Plants do not come up, the Ground muſt not be diſturbed till after the Spring following, to wait for the Plants coming up. When the Plants come up, ſome of them may be tranſplanted into a moiſt rich Soil, allowing them at leaſt four or five Feet Room every Way ; they ſhould be ſhaded until they have taken new Root ; and if they are frequently watered in dry Weather, they will grow to a large Size ; but their Branches muſt be ſupported by Stakes, otherwiſe they are very ſubject to break with ſtrong Winds. The Flowers of this Plant are not more conſpicuous than thoſe of the Hemp, to which theſe are near akin ; therefore are only preſerved by ſuch Perſons as are curious in Botany, for the Sake of Variety. If the Seeds are ſuffered to ſcatter, the Plants will come up the following Spring, provided the Ground is not diſturbed ; and if ſown in Autumn, the Plants will come up the following Spring, and may be treated as above.

The 4th Sort grows naturally in *North America*, from whence I have frequently received the Seeds. This divides into many Branches, the lower Part of which are garniſhed with whole Leaves, but the upper Part hath compound Leaves reſembling thoſe of the ſecond Sort ; the Spikes of Flowers are produced from the Wings of the Stalks, in which this differs from the ſecond. This may be treated in the ſame Manner as the 2d Sort.

The 5th Sort is a Native of *Peru*, from whence the younger *Juſſieu* ſent the Seeds to the Royal Garden at *Paris*: it has ſucceeded in the *Chelſea* Garden, where it annually perfects its Seeds.

This Sort grows to the Height of ten or twelve Feet, with a woody Stem, dividing into ſeveral Branches ; theſe are garniſhed with hairy Leaves, compoſed of ſeveral winged Lobes, and are placed alternately upon the Branches ; the Spikes of Flowers are ſingle, hairy, and are produced at the Extremity of the Branches. The female Flowers (which are ſituated below the male, on the ſame Spikes) grow in ſmall Cluſters, at ſeparate Diſtances, each having two long narrow Segments of the Empalement, which riſe above the Seed Veſſel.

This is a perennial Plant, and may be propagated by Cuttings or Seeds ; if by the former, they ſhould be planted in a ſhady Border, in any of the Summer Months ; theſe will require to be frequently watered : In a Month or five Weeks they will have good Roots, therefore they ſhould be taken up and potted ; for when they are left longer in the full Ground, they will grow very luxuriant, ſo will not ſo ſoon recover their Removal, as thoſe which are tranſplanted earlier. Theſe Plants are hardy, ſo may be expoſed to the open Air in Summer ; and in the Winter, if ſheltered in a common Green-houſe, with Myrtles and other hardy exotic Plants, they will live ſeveral Years. In mild Winters, the Roots of this Plant have lived in the full Ground in a warm Border, without any Covering.

The Seeds of this Sort ſeldom come up the ſame Year when ſown in Spring, but thoſe which have fallen, or been ſown in the Autumn, have grown the following Year.

AMELANCHIER. *See* Chionanthus.

AMETHYSTEA. *Lin. Gen.* 32. Amethyſt.

The *Characters* are,

The Flower hath a permanent Empalement of one Leaf, which is Bell-ſhaped, angular and cut into five equal pointed Segments at the Brim ; the Flower is of one Leaf, of the Lip Kind, and divided into five unequal Parts at the Top ; the upper Lip is erect, roundiſh, concave, and cut into two ; the lower Lip is cut into three Parts, the middle Segment being concave and of the ſame Length with the upper Lip, but the two Side Segments are ſhorter and erect. The Flower hath two ſlender Stamina, which ſtand under the upper Lip, but are longer ; theſe are crowned with roundiſh Summits. In the Center is ſituated a quadrifid Germen, ſupporting a ſingle Style, crowned with two acute Stygma : After the Flower is paſt, the Germen becomes four naked Seeds, ſhut up in the Empalement.

We know but one *Species* of this Genus, *viz.*

AMETHYSTEA. *Hor. Up.* This is the *Amethyſtina montana erecta foliis exiguis digitatis trifidis ſerratis, floſculis cum comâ è cœruleo-janthinis. Amman. Ruth.* 4. *i. e.* Mountain upright Amethyſt, with ſmall trifid ſawed Leaves, and the Heads and Flowers of a Jacinth Blue.

This Plant is a Native of the Mountains in *Siberia*, from whence the Seeds were ſent to the Imperial Garden at *Peterſburgh*, Part of which were ſent me by the late Dr. *Amman*, and they grew in the *Chelſea* Garden, where the Plants annually produce Seeds.

It is an annual Plant with an upright, Stalk, which riſes about a Foot high, and toward the Top puts out two or three ſmall lateral Branches ; theſe are garniſhed with ſmall trifid Leaves, ſawed on their Edges, and of a very dark green Colour ; at the Extremity of the Branches, the Flowers are produced in ſmall Umbels ; theſe are of a fine blue Colour, as are alſo the upper Part of the Branches, and the Leaves immediately under the Umbel ; ſo that although the Flowers are ſmall, yet from their Colour, with thoſe of the upper Part of the Stalks, the Plants make a pretty Appearance. If the Seeds of this Plant are ſown in Autumn, or are permitted to ſcatter, the Plants will come up early the following Spring, and theſe will flower the Beginning of *June* ; but thoſe which are ſown in the Spring, will not flower till *July* ; and in dry Seaſons, the Seeds will remain in the Ground a whole Year, ſo that the beſt Time for ſowing them is in Autumn.

When the Plants come up, they require no Care but to keep them clean from Weeds, and where too cloſe to thin them, for they do not thrive when tranſplanted, therefore the Seeds ſhould be ſown where they are to remain.

AMMANNIA. *Houſt. N. G. Lin. G. P.* 144.

The *Characters* are,

It hath a Bell-ſhaped oblong erect Empalement, having four Angles, and divided at the Brim into eight ſlender Parts; this is permanent. The Flower hath no Petals, but four ſlender Stamina which are as long as the Empalement in which they are inſerted. Theſe are crowned with double Summits. In the Center is ſituated a large round Germen, ſupporting a ſhort Style crowned with a Stigma; the Empalement afterward becomes a round Capſule with four Cells, which are filled with ſmall Seeds.

The *Species* are,

1. Ammannia *foliis ſemiamplexicaulibus, caule tetragono. Hort. Cliff.* 344. *i. e. Ammania* with a ſquare Stalk, and Leaves embracing it half round.

2. Ammannia *foliis ſubpetiolatis caule ramoſa. Lin. Sp. Plant.* 120. *i. e. Ammannia* with Leaves having ſhort Foot Stalks and a branching Stalk.

3. Ammannia *foliis ſubpetiolatis capſulis calyce majoribus coloratis. Lin. Sp. Plant.* 120. *i. e. Ammannia* whoſe Leaves have ſhort Foot Stalks, and a coloured Seed Veſſel larger than the Flower Cup.

The 1ſt grows naturally in moiſt Places in *Jamaica*.

It grows about a Foot high, with an upright ſquare Stalk, and long narrow Leaves ſet in Form of a Triangle, whoſe Baſe half ſurrounds it; theſe grow the whole Length of the Stem. They are of a pale Green, and of the Conſiſtence of thoſe of Purſlane; the Stalks are alſo ſucculent, and of the ſame Colour with thoſe of that Plant. The Flowers come out in Whorles round the Stalks, at the Joints where the Leaves adhere, in Cluſters: Theſe have no Petals, ſo make no great Appearance, and are ſoon ſucceeded by round Seed Veſſels, which are full of ſmall Seeds.

Theſe Plants muſt be raiſed on a hot Bed in the Spring, and afterward removed to another hot Bed to bring them forward; when they have acquired Strength, they ſhould be tranſplanted into Pots filled with rich light Earth, and placed under a Frame, obſerving to ſhade them till they have taken freſh Root; then they ſhould be placed in a Glaſs Caſe or Stove to ripen their Seeds, for the Plants are too tender to thrive in the open Air here, unleſs the Summer proves very warm.

The 2d Sort grows naturally in *Virginia* and *Carolina*; this is an annual Plant, which riſes about a Foot high, with red ſucculent Stalks, putting out Side Branches, which grow oppoſite: The Flowers are produced ſingle from the Wings on the lower Part of the Branches, but toward the Top they are in Cluſters. Theſe have no Beauty, ſo are only preſerved in Botanic Gardens for the Sake of Variety. This Sort will perfect its Seeds in the open Air, if the Plants are raiſed on a hot Bed in the Spring, and planted in a warm Border.

The 3d Sort grows naturally in *China*; this is a very low Plant, ſeldom riſing more than three Inches high; the Leaves are placed oppoſite on the Branches, and the Flowers grow in Whorles, from the Wings of the Stalk. As this Plant has little Beauty, ſo it is rarely preſerved in Gardens. If raiſed on a hot Bed in Spring, and treated in the ſame Manner as the 1ſt Sort, the Seeds will ripen in *England*.

AMMI. Biſhops-weed.

The *Characters* are,

It is an umbelliferous Plant; the great Umbel is compoſed of many ſmaller, which are diſpoſed like Rays. The Flowers are difform, each having five Petals, which are Heart-ſhaped. The Germen becomes a ſmall round ſtriated Fruit, compoſed of two Seeds, which are plain within and convex on their Outſide.

The *Species are,*

1. Ammi *foliis inferioribus pinnatis lanceolatis ſerratis, ſuperioribus multifidis linearibus. Hort. Up.* Biſhops-weed with under Leaves, which are winged, Spear-ſhaped, and ſawed, and the upper Leaves are divided into many narrow Segments. *Ammi majus.* Common Biſhops-weed.

2. Ammi *foliorum omnium lacinulis lanceolatis. Guett.* 2. p. 433. *i. e.* Biſhops-weed with all its Leaves cut in Shape of a Spear.

The 1ſt Sort is annual; and is propagated by Seeds, which ſhould be ſown in Autumn, in the Place where it is to remain; and in the Spring, the Ground ſhould be hoed to cut up the Weeds, and alſo to thin the Plants, in the ſame Manner as is practiſed for Carrots, leaving them four or five Inches aſunder; or if the Ground is good where they grow, they muſt be left at leaſt ſix Inches, for they will grow large and cover the Ground; after this they require no farther Care, but to keep them clean from Weeds. In *June* they will flower, and their Seeds ripen in *Auguſt*, which ſhould be gathered as it ripens, otherwiſe it will ſoon ſcatter. Theſe Seeds are uſed in Medicine, ſo may be had in Plenty with this Management; for it will grow in any open Situation, but thrives beſt on light ſandy Land. When the Seeds are ſown in Spring, they ſeldom come up the ſame Year, and if they ſhould, they produce but few Seeds.

The 2d Sort is a perennial Plant, which is preſerved in Botanic Gardens for Variety, but having little Beauty, is rarely admitted into other Gardens. It may be propagated by Seeds, which ſhould be ſown in Autumn. It will grow in any open Situation, is very hardy, and thrives beſt on a moiſt Soil.

AMMI PERENNE. *See* Sium.

AMOMUM. *Lin. Gen. Plant.* 2. *Zinziber.* Ginger.

The *Characters* are,

The Flowers are collected in a ſcaly Spike, each having a double (Spatha) or Sheath; the outer Sheath looſely covers the Scale, and the inner encompaſſes the Tube of the Flower, with the Parts of Generation; the Flower is of one Leaf, tubulous below, but divided into three Parts at the Brim, the middle Segment being longer and broader than the others. In the Boſom of the Flower is ſituated an oblong thick Nectarium. From the Tube of the Flower ariſes two ſlender Stamina, which are crowned with thick ſhort Summits. Under the Receptacle of the Flower is placed the round Germen ſupporting a ſingle Style, which is as long as the Tube of the Flower, and crowned with a hairy Stigma. The Germen afterward becomes an oval three cornered Seed Veſſel, opening in three Parts, containing ſeveral Seeds.

The *Species* are,

1. Amomum *ſcapo nudo ſpicâ ovato. Hort. Cliff.* 3. *i. e. Amomum* with a naked Stalk and oval Spike of Flowers. This is the *Zinziber. C. B. P.* 35. Ginger.

2. Amomum *ſcapo nudo ſpicâ oblongâ obtuſâ. Hort. Cliff.* 3. *i. e. Amomum* with a naked Stalk and an oblong blunt Flower Spike. Broad leaved wild Ginger, called *Zerumbet.*

3. Amomum *ſcapo bracteis alternis laxis, caule foliorum altiſſimo. i. e. Amomum* with Flower Stalks looſely branching alternately, and very tall Leaf Stalks.

The 1ſt, which is the common Ginger, is cultivated for Sale in moſt of the Iſlands of *America*, but is a Native of the *Eaſt-Indies*, and alſo of ſome Parts of the *Weſt-Indies*, where it is found growing naturally without Culture. The dried Roots of this Sort furniſh a conſiderable Export from the *Britiſh* Colonies in *America*. Theſe Roots are of great Uſe in the Kitchen, as alſo in Medicine; and the green Roots preſerved as a Sweetmeat are preferable to every other Sort.

The Roots of this Sort are jointed, and ſpread in the Ground; theſe put out many green Reed-like Stalks in the Spring, which riſe to the Height of two Feet and a Half; theſe are garniſhed with long narrow Leaves, placed alternately all their Length, and cloſely embrace the Stalks at their Baſe. The Flower Stems afterward ariſe by the Side of theſe, immediately from the Root; theſe are naked, ending with an oblong ſcaly Spike, from each of theſe Scales is produced a ſingle blue Flower, whoſe Petals are but little longer than the ſquamoſe Covering. Theſe Flowers appear in *September*, and in about a Month after the Stalks entirely decay, ſo that the Roots remain inactive three or four Months.

The 2d Sort grows naturally in *India*; the Roots are much larger than thoſe of the 1ſt, but are jointed in the ſame Manner. The Stalks grow from three to near four Feet high; theſe are garniſhed with oblong Leaves, placed alternately, and embrace the Stalks at their Baſe. The Flower Stems ariſe immediately from the Root, and are terminated by oblong blunt ſcaly Heads; out of each Scale is produced a ſingle white Flower, whoſe Petals extend a conſiderable Length beyond their ſcaly Covering. Theſe appear in *September*; and in *November* all the Stalks periſh in the ſame Manner as the Ginger.

The 3d Sort hath thick fleſhy Roots, reſembling thoſe of the large flag *Iris*, in the Spring theſe ſend forth many green Reed-like Stalks, which riſe to the Height of eight or nine Feet, theſe are garniſhed with very long narrow Leaves, ſet alternately the whole Length of the Stalks, and cloſely embrace them at their Baſe. Theſe Stalks decay intirely in Autumn, and new ariſe from the Roots in the Spring, but it hath not produced any Flowers as yet in *England*, though the Roots thrive and increaſe greatly, where they are properly managed.

All theſe Sorts are tender, and require a warm Stove to preſerve them. They are eaſily propagated by parting their Roots; the beſt Time for doing this is in Spring, before they put out new Shoots, for they ſhould not be tranſplanted in Summer when they are in full Vigour, nor do they ſucceed ſo well when they are removed in Autumn, becauſe they remain long after in an inactive State, and during that Time, if Wet comes to the Roots, it often cauſes them to rot. When the Roots are parted, they ſhould not be divided into ſmall Pieces, eſpecially if they are deſigned to have Flowers, for until the Roots have ſpread to the Side of the Pots, they rarely put out Flower Stems, for which Reaſon they ſhould not be planted in very large Pots.

Theſe Plants thrive beſt in a light rich Kitchen Garden Earth; with this the Pots ſhould be filled within two Inches of the Top, then the Roots, ſhould be placed in the Middle of the Pots, obſerving that their Crowns are upwards, and the Pots filled up with the ſame rich Earth; after this they ſhould be plunged into a hot Bed of Tanners Bark, and muſt be ſparingly watered, until their Stalks appear above Ground, when they will require a greater ſhare of Moiſture, eſpecially during the warm Summer Months; but in Autumn the Waterings muſt not be often, nor in great Plenty; and during the Winter Seaſon, when the Roots are inactive, very little Water ſhould be given them. The Pots with theſe Roots ſhould conſtantly remain plunged in the Tan Bed, for if they are taken out and placed on Shelves in the Stove, their Fibres frequently ſhrink, which often occaſions the Roots to decay.

With this Management all theſe Sorts have multiplied greatly with me, and the common Ginger has produced Roots which have weighed five or ſix Ounces, but the others have been near a Pound Weight.

AMOMUM PLINII. *See* Solanum.

AMORIS POMUM. *See* Lycoperſicon.

AMORPHA. *Lin. Gen. Plant.* 768. Baſtard Indigo.

The *Characters* are,

The Flower hath a permanent Empalement of one Leaf, which is tubulous, cylindrical, and cut into five ſmall obtuſe Parts at the Brim. The Flower is of the Butterfly Kind, the upper Petal, or Standard, is ſmall, concave, and erect; this is inſerted between the two upper Segments of the Empalement. It hath ten Stamina, theſe are joined at their Baſe, are of unequal Lengths, and crowned with Summits; in the Center is ſituated a roundiſh Germen, ſupporting an Awl-ſhaped Style, which is the Length of the Stamina, and crowned with a ſingle Stigma; the Germen afterwards becomes a reflexed Moon-ſhaped Pod, having one Cell, in which are lodged two Kidney-ſhaped Seeds.

We know but one *Species* of this Genus, *viz.*

Amorpha. *H. C.* Baſtard Indigo. This is the *Barba jovis Americana pſeudoacaciæ foliis floſculis purpureis minimis. Cat. Hort.* or the *American Jupiter*'s Beard with Baſtard *Acacia* Leaves, and ſmall purple Flowers.

This Shrub grows naturally in *Carolina*, where formerly the Inhabitants made a coarſe Sort of Indigo from the young Shoots, which occaſioned their giving it the Title of Baſtard Indigo.

It riſes with many irregular Stems, to the Height of twelve or fourteen Feet; theſe are garniſhed with very long winged Leaves, in Shape like thoſe of the common *Acacia*. At the Extremity of the ſame Year's ſhoots, the Flowers are produced in long ſlender Spikes, which are very ſmall, and of a deep purple Colour, the Stamina ſtand out beyond the Petals, and are crowned with yellow Summits; after the Flowers are paſt, the Germen turns to a ſhort Pod, having two Kidney-ſhaped Seeds, but theſe do not ripen in *England*.

The Seeds of this Plant were ſent to *England* from *Carolina*, by Mr. *Cateſby*, in 1724, from which many Plants were raiſed in the Gardens near *London*; theſe were of quick Growth, and many of the Plants produced Flowers in three Years. At preſent it is become very common in all the Gardens and Nurſeries, where it is propagated as a flowering Shrub. It is geneerally propagated by Seeds, which are annually ſent from *America*, for it is found in many of the northern Colonies there; it may alſo be propagated by laying down the young Branches, which in one Year will make good Roots, and may then be taken off and planted, either in the Nurſery, or the Places where they are deſigned to remain. If they are put into a Nurſery, they ſhould not remain there more than one Year; for as the Plants make large Shoots, they do not remove well when they have remained long in a Place. The Plants muſt have a ſheltered ſituation, otherwiſe their Branches will be broken by the Winds. As theſe Shoots are large and ſoft, their upper Parts are generally killed by Froſt in Winter; but they put out Shoots again in Plenty below the dead Part, the Spring following.

AMYGDALUS. *L. G. P.* The Almond Tree.

The *Characters* are,

It hath a tubulous Empalement of one Leaf, which is cut at the Brim into five obtuſe Segments, the Flower hath five oval obtuſe concave Petals, which are inſerted in the Empalement; in the Center of the Flower is ſituated a roundiſh hairy Germen, ſupporting a ſingle Style the Length of the Stamina, which is crowned by a round Stigma; this is attended by a great Number of ſlender erect Stamina, which in many Species are not ſo long as the Petals of the Flower, theſe are crowned with ſlender Summits. After the Flower is paſt, the Germen becomes an oval compreſſed large Fruit, with a thin tough hairy Covering having a longitudinal Furrow, this opens, and falls away, leaving an oval compreſſed Nut, which is furrowed and netted, incloſing a ſingle Seed of the ſame form.

The *Species* are,

1. AMYGDALUS *foliis petiolatis ſerratis petalis florum emarginatis.* Almond Tree with ſawed Leaves, having Foot Stalks, and the Petals of the Flower indented. Common manured Almond Tree.

2. AMYGDALUS *foliis petiolatis marginibus crenatis, corollis calycæ vix longioribus.* Almond Tree with crenated Leaves, having Foot Stalks, and the Petals of the Flowers no longer than the Empalement. The tender-ſhelled Almond, commonly called *Jordan* Almond.

3. AMYGDALUS *foliis lineari-lanceolatis acuminatis, marginibus crenatis.* Almond Tree with pointed narrow Spear-ſhaped Leaves, crenated on their Edges. White flowering Almond.

4. AMYGDALUS *foliis lanceolatis integerrimis, argenteis perennantibus petiole breviore. i. e.* Almond Tree with Spear-ſhaped ſilvery Leaves, which are entire, and continue all Winter, and very ſhort Foot Stalks.

5. AMYGDALUS *foliis petiolatis ſerratis baſi attenuatis.* Almond with ſawed Leaves, which are narrowed at the Foot Stalk. Dwarf Almond with ſingle Flowers.

The 1ſt is the common Almond, which is cultivated more for the Beauty of its Flowers, than for its Fruit. There are two Varieties of this, one with ſweet, and the other bitter Kernels, which ariſe from the Fruit of the ſame Tree.

The 2d Sort is commonly known by the Title of *Jordan* Almonds, the Nuts of this Kind are frequently brought to *England.* Theſe have a tender Shell, and a large ſweet Kernel. The Leaves are broader, ſhorter, and grow much cloſer than thoſe of the common Sort, and their Edges crenated. The Flowers are very ſmall, and of a pale Colour, inclining to white. I have ſeveral Times raiſed theſe Trees from the Almonds which came from abroad, and always found the Plants to maintain their Difference from the common Almond.

The 3d Sort hath narrow ſharp-pointed Leaves, ſawed on their Edges; the Flowers are not ſo large as thoſe of the common Almond, and are white; the Shoots are much ſmaller, and the Joints cloſer than the common Sort, nor is the Tree ſo hardy, therefore ſhould have the Advantage of a warm Situation, otherwiſe it will not thrive. This Sort flowers early in the Spring, and rarely produces Fruit in *England.* But from an old Tree which grew againſt a South-weſt aſpected Wall, I have ſome Years had the Fruit ripe, and well flavoured, but their Kernels were ſmall.

The 4th Sort was found growing near *Aleppo,* from whence the Fruit was ſent to the Duke *D'Ayen* in *France,* who raiſed ſeveral of the Plants in his curious Garden at *St. Germains,* and was ſo good as to ſend me a Share of them, which are flouriſhing in the *Chelſea* Garden, where they have endured the open Air for three years, againſt a Wall without any Covering. The Leaves of this Tree are ſilvery, and very like thoſe of the Sea Purſlane. Theſe continue all the Year, but as it hath not produced any Flowers yet in *England,* I can give no farther Account of its Difference from the other Sorts.

The 5th Sort is very common in the Nurſeries about *London,* and is uſually ſold with other flowering Shrubs to adorn Gardens. This Sort ſeldom riſes more than four Feet high, ſending out many ſide Branches. The Roots of this are very ſubject to put out Suckers, by which it may be increaſed in Plenty, but if theſe are not annually taken away, they will ſtarve the old Plants. As theſe Suckers are very apt to creep at the Root, and put out Suckers again, ſo thoſe Plants which are propagated by Layers are much preferable. This Shrub flowers in *April,* at which Time all the young Shoots are covered with Flowers, which are of a Peach Bloſſom Colour; they make a fine Appearance when intermixed with Shrubs of the ſame Growth.

The common Almond is cultivated in all the Nurſeries, and the Trees are generally planted for the Beauty of its Flowers. Theſe often appear in *February,* when the Spring is forward, but if Froſt comes after, the Flowers are ſoon deſtroyed, ſo that their Beauty is of ſhort Duration, and in thoſe Seaſons there are few of the Almonds, whereas, when the Trees do not flower till late in *March,* they ſeldom fail to bear Plenty of Fruit, many of which will be very ſweet, and fit for the Table when green, but they will not keep long.

They are propagated by inoculating a Bud of theſe Trees into a Plum, Almond, or Peach Stock, in the Month of *July,* (the Manner of this Operation ſee under the Article of Inoculation). The next Spring, when the Buds ſhoot, you may train them up either for Standards, or ſuffer them to grow for half Standards, according to your own Fancy; though the uſual Method is to bud them to the Height the Stems are intended to be; and the ſecond Year, after budding, they may be removed to the Places where they are to remain. The beſt Seaſon for tranſplanting theſe Trees, if for dry Ground, is in *October,* as ſoon as the Leaves begin to decay; but for a wet Soil, *February* is much preferable; and obſerve always to bud upon Plum Stocks, for wet Ground; and Almonds or Peaches for dry.

ALMOND, the Dwarf, with double Flowers. *See* Perſica.

ANACAMPSEROS. *See* Sedum.

ANACARDIUM. The Caſhew Nut, or *Acajou.*

The *Characters* are,

It hath an Empalement of one Leaf, which is erect, and cut into five acute Segments at the Brim. The Flower is of one Leaf, having a ſhort Tube, and cut into five Parts at the Top, which are reflexed, and are longer than the Empalement; the Flower hath ten ſlender Stamina, which are as long as the Petals, and are crowned with ſmall Summits. In the Center is placed a round Germen, ſupporting an Awl-ſhaped Style, crowned with an acute Stigma. The Germen afterwards becomes a large oval fleſhy Fruit, having a large Kidney-ſhaped Nut growing to its Apex.

We have but one *Species* of this Genus, *viz.*

ANACARDIUM *Hort. Cliff.* 161. the occidental *Anacardium.* This is the *Acajou. Piſ. Hiſt. Braſ.* 58. The Caſhew, or Cajou, by Sir *Hans Sloane.*

This grows to the Height of 15 Feet or more, in its native Country, which is both *Indies*, but in *England* the Plants are with great difficulty preſerved; though by their firſt Shoot from the Seeds, they appear ſo ſtrong and vigorous, as to promiſe a much greater Progreſs than they are ever ſeen to make.

They are eaſily raiſed from the Nuts, which are annually brought from *America*; each of theſe ſhould be planted in a ſmall Pot filled with light ſandy Earth, and plunged into a good hot Bed of Tanners Bark, giving them no Water till the Plants come up, for the Nuts often rot with Moiſture. The Reaſon for my adviſing the Nuts to be each put into a ſeparate Pot, is, becauſe the Plants ſeldom live when tranſplanted. If the Nuts are freſh, the Plants will come up in about a Month after Planting; and, in a Month more, they will be four or five Inches high, with large Leaves; from this quick Growth, many have been deceived by ſuppoſing them hardy, and that they would continue the like Progreſs, whereas they ſeldom advance much farther the ſame Year.

The Plants muſt be conſtantly kept in the Stove, for they are too tender to live abroad in *England*, in the warmeſt Seaſon of the Year, nor will they thrive in a common Green-houſe in Summer. As theſe Plants abound with a milky acrid Juice, they ſhould have but little Water, even in Summer; and in Winter, if they are ſparingly watered once a Month, it will be ſufficient, for their Roots are tender and ſoon periſh with Moiſture.

When they are tranſplanted, it will be the beſt Method to break the Pots, for the Roots do not put out many Fibres to hold the Earth about them, ſo that in ſhaking them out, moſt of the Earth will fall from their Roots, and when this happens, the Plants ſeldom ſurvive; therefore in breaking the Pots Caution muſt be had not to diſturb the Earth more than can be avoided, then the Plant, with the Ball of Earth to its Roots, ſhould be put into a Pot one Size larger than that in which it had before grown, filling up the Pot with light ſandy Earth, and plunge the Pot again into the hot Bed. Theſe plants ſhould not be removed oftener than once a Year, nor ſhould they be put into large Pots, for unleſs their Roots are confined, they will not thrive.

With this Management I have kept theſe Plants ſeveral Years, but they are of ſlow Growth after the firſt Seaſon, ſo that I have not raiſed any of them more than two Feet and a Half high, and it is very rare to ſee them in *England*, more than half that Height, tho' I have ſeen two of them in flower, one in the late Sir *Charles Wager*'s Garden at *Parſons-green*, and the other in *Chelſea* Garden.

The pulpy Fruit to whoſe Apex this Nut grows, is as large as an Orange, and is full of an acid Juice, which is frequently mixed in the making of Punch in *America*. Many of theſe Fruit have been brought to *England*, in Caſks of Rum for the ſame Purpoſe.

The Nut is of the Size and Shape of a Hare's Kidney, but is much larger at the End which is next the Fruit, than at the other. The outer Shell is of an Aſh Colour, and very ſmooth; under this is another which covers the Kernel, between theſe there is a thick black inflammable Oil, which is very cauſtic; this will raiſe Bliſters on the Skin, and has often been very troubleſome to thoſe who have incautiouſly put the Nuts into their Mouths to break the Shell.

The milky Juice of this Tree will ſtain Linen of a deep Black which cannot be waſhed out again; but whether this has the ſame Property with that of the Eaſtern *Anacardium*, has not yet been fully experimented, for the inſpiſſated Juice of that Tree is the beſt Sort of *Lac*, which is uſed for ſtaining of Black in *China* and *Japan.*

ANACYCLUS. *Lin. G. P. Santolinoides.*

The *Characters* are,

It hath compound Flowers, conſiſting of female and hermaphrodite, included in one common ſcaly Empalement, the Rays or Borders being formed of the female Flowers, which are tubulous, and ſtretched out in the Form of a Tongue above the Empalement. The hermaphrodite Flowers which compoſe the Diſk, are Funnel-ſhaped, Quinquefid, and ſpread open; theſe have each five ſlender Stamina, which are crowned with cylindrical Summits; in the Center is placed an oblong compreſſed Germen, ſupporting a ſlender Style crowned with bifid Stigma. The female Flowers have an oblong membraneous Germen, ſupporting a ſlender Style, crowned with two ſlender reflexed Stigma; the hermaphrodite Flowers are ſucceeded by one oblong compreſſed Seed. The female Flowers are ſucceeded by a ſingle oblong Seed with broad Borders or Wings, which are indented at the Top; theſe are placed on a convex Receptacle.

The *Species* are,

1. ANACYCLUS *foliis decompoſitis linearibus laciniis diviſis planis. Hort. Cliff.* 417. *Anacyclus* with narrow decompounded Leaves, whoſe Diviſions are plain. The leaſt Mayweed of *Crete* with a Chamomile Leaf and a reflexed Head.

2. ANACYCLUS *foliis compoſitis ſetaceis acutis rectis. H. C. Anacyclus* with compound briſtly upright pointed Leaves. Eaſtern Chamomile with pinnated Leaves.

3. ANACYCLUS *foliis decompoſitis linearibus laciniis diviſis teretiuſculis acutis floribus floſculoſis. H. C. Anacyclus* with decompounded narrow Leaves, whoſe Diviſions are taper and pointed, and floſcular Flowers. *Chryſanthemum Valentinum.* Corn Marygold of *Valentia.*

The two 1ſt Sorts grow naturally in the Iſlands of the *Archipelago*, from whence Dr. *Tournefort* ſent their

Seeds to the Royal Garden at *Paris*. I have alſo received the Seeds of both theſe Plants from *Portugal*, ſo that it may alſo grow naturally there, as do many of thoſe Plants which were diſcovered by *Tournefort* in the *Levant*. Theſe are low Plants, whoſe Branches trail on the Ground. The 1ſt Sort has fine cut Leaves like thoſe of Chamomile; the Flowers are ſmall, white, and grow ſingle, with their Heads declining; theſe are like thoſe of the common Mayweed. The 2d hath winged Leaves like thoſe of the Ox-eye; the Flowers are white, and like thoſe of the Chamomile.

The 3d Sort grows naturally in *Spain*. This grows about a Foot high, ſending out many Side Branches; the Leaves are finely divided, like thoſe of the Chamomile, and are hairy: the Flowers grow ſingle at the Extremity of the Branches, and are of a bright yellow Colour, with a ſilvery ſcaly Empalement. They are as large as thoſe of the Ox-eye.

All theſe Plants are annual: The Seeds ſhould be ſown early in the Spring in a Border of light Earth, where they are deſigned to remain, and require no other Care but to keep them clean from Weeds, and thin the Plants where they are too cloſe. As theſe have no great Beauty, ſo a few Plants only may be left for the Sake of Variety. They flower in *July* and *Auguſt*, and their Seeds ripen in *September*.

ANAGALLIS. *Lin. Gen. Plant.* 189. Pimpernel.

The *Characters* are,

The Flower hath an Empalement which is permanent, and is cut into five ſharp Segments which are hollow. The Flower is of one Leaf ſpread open, and cut into five Parts at the Brim; it hath five erect Stamina which are ſhorter than the Petals, and are crowned with ſingle Summits. In the Center is placed the globular Germen, ſupporting a ſlender inclining Style crowned with a blunt Stigma. The Germen afterwards becomes a globular Veſſel with one Cell, opening horizontally, in which are lodged ſeveral angular Seeds.

The *Species* are,

1. ANAGALLIS *foliis indiviſis caule procumbente, Lin. Gen. Plant.* 148. Pimpernel with undivided Leaves and a trailing Stalk. Common Pimpernel with a red Flower.
2. ANAGALLIS *foliis indiviſis glaucis caule procumbente flore cœruleo.* Pimpernel with undivided glaucous Leaves, a trailing Stalk, and blue Flower.
3. ANAGALLIS *foliis indiviſis caule erecto. Lin. Sp. Plant.* 148. Pimpernel with an undivided Leaf and upright Stalk. Narrow leaved Pimpernel with a blue Flower.
4. ANAGALLIS *foliis cordatis amplexicaulibus, caulibus compreſſis. Lin. Sp. P.* Pimpernel with Heart-ſhaped Leaves, embracing the Stalks which are compreſſed. Broad-leaved *Spaniſh* Pimpernel with a blue Flower.

The 1ſt Sort is very common in Corn Fields, and other cultivated Places, in *England*. The 2d Sort is found wild in the Fields, but is leſs common than the 1ſt in *England*. This is ſuppoſed to be only a Variety of the 1ſt, but from thirty Years cultivating it, I can affirm it never alters; and the Plants before they ſhew their Flowers are ſo different, as to be eaſily diſtinguiſhed from the 1ſt. There is a Variety of this with a deeper blue Flower, whoſe Seeds I received from *Nice*, and this hath retained its Colour for three Years, during which Time I have ſown it in the *Chelſea* Garden.

Theſe are all annual Plants, which ariſe from Seeds and, if ſuffered to remain till their Seeds ſcatter, will become Weeds; they are never cultivated except in Botanic Gardens for Variety. The 1ſt and 2d Sorts are directed by the *College of Phyſicians* for medicinal Uſe.

The 3d Sort is a very beautiful ſmall perennial Plant, producing great Numbers of fine blue Flowers, in *April* and *May*: This may be propagated by Seeds, which ſhould be ſown ſoon after they are ripe; for if they are kept till Spring, they do not always ſucceed: This Plant requires to be ſheltered from extreme Cold, which will ſometimes deſtroy it in Winter.

The 4th Sort was ſent me from *Spain* by Mr. *Hortega*, Intendant of the Royal Garden at *Madrid*. This is a trailing annual Plant, with broad Leaves and blue Flowers. It will eaſily riſe from Seeds, and requires no other Care but to keep the Plants clean from Weeds.

ANAGYRIS, Stinking Bean-trefoil.

The *Characters* are,

It hath a Bell-ſhaped Empalement, which is cut into five Parts at the Brim, the upper Segment being much deeper cut than the others. The Flower is of the Butterfly Kind, the Standard is Heart-ſhaped, upright, broad, and indented. This is much longer than the Empalement; the Wings are oblong, plain, and longer than the Standard; the Keel is long and upright: It hath ten Stamina, which riſe diſtinct and are equal, and crowned with ſingle Summits. In the Center is placed an oblong Germen, ſupporting a ſingle Style having a hairy Stigma. The Germen afterward becomes a large oblong Pod, which is reflexed at the Point, in which is lodged ſeveral Kidney-ſhaped Seeds.

The *Species* are,

1. ANAGYRIS *foliis ovatis floribus lateralibus.* Stinking Bean-trefoil with oval Leaves, and Flowers proceeding from the Wings of the Stalks.
2. ANAGYRIS *foliis oblongis racemis longioribus.* Stinking Bean-trefoil of *Candia*, with oblong Leaves and yellow Flowers.

The 1ſt Sort grows wild in the South of *France*, as alſo in *Spain* and *Italy*: This is a Shrub which uſually riſes to the Height of eight or ten Feet, and produces its Flowers in *April* and *May*, which are of a bright yellow Colour, growing in Spikes, ſomewhat like thoſe of the *Laburnum*: The Seeds are ſeldom perfected in this Country, which is the Reaſon of its preſent Scarcity in *England*.

The other Sort is a Native of *Candia*, and ſome of the Iſlands of the *Archipelago*, and at preſent is very rare in the *Engliſh* Gardens. This Sort hath longer Leaves than the former, and flowers later in the Summer, ſo that it very rarely produces Seeds.

Theſe may be both propagated by laying down their tender Branches in the Spring, obſerving in dry Weather to ſupply them with Water; which if duly performed, the Layers will have taken Root by the following Spring, when they ſhould be cut off from the old Plants, a little Time before they begin to put out their Leaves, and planted in a warm Situation; for if they are too much expoſed to cold Winds, they will be in Danger of being deſtroyed in a hard Winter. This Method of propagating theſe Plants, is to ſupply their Defect in not producing ripe Seeds in this Country; for the Plants which are produced from Seeds, will be much handſomer, and will riſe to a much greater Height.

If you propagate theſe Plants from Seeds, you ſhould ſow them on a warm Border of light freſh Earth about the End of *March*, obſerving to do it in dry Weather; for if much Wet ſhould fall after the Seeds are in the Ground, they rot. If the Seeds are good and the Seaſon favourable, the Plants will appear in a Month after they are ſown; at which Time you ſhould carefully clear them from Weeds, and in very dry Weather they ſhould be frequently refreſhed with Water: If theſe Rules be duly obſerved, the Plants will be ſix or eight Inches high before Winter. While young, they will be in much greater Danger of ſuffering by Froſt: Therefore, if the Winter ſhould prove very ſevere, you ſhould ſhelter them with Mats during the Continuance of the Froſt, but in mild Weather they ſhould be expoſed to the open Air. In *March* following you ſhould carefully take up theſe Plants, obſerving not to injure their Roots; then tranſplant them into a Nurſery Bed in Rows at a Foot Diſtance, and at ſix Inches Diſtance in the Rows; obſerving if the Seaſon proves dry, to give them Water until they have taken new Root, after which they will require no other Culture, but to keep them clear from Weeds, during the Summer Seaſon; but if the following Winter ſhould prove very ſevere, it will be proper to ſcreen them with Mats or Peaſe-haulm, and lay ſome rotten Tan over the Surface of the Ground, to prevent the Froſt from penetrating to the Roots, otherwiſe they may be deſtroyed. In this Bed they may remain two Years, by which Time they will be fit to tranſplant into the Places where they are deſigned to remain. The beſt Seaſon to remove them is in *March*, juſt before they begin to ſhoot, and obſerve not to injure their Roots; water them, if the Seaſon ſhould prove dry, until they have taken Root; and lay ſome Mulch on the Surface of the Ground about their Roots, to prevent the Air from penetrating to dry their Fibres, which will ſave much Trouble in Watering. The fourth Year from Seeds they will begin to produce Flowers, and will continue to Flower every Year after, ſo will be very proper to intermix with other flowering Shrubs of the ſame Growth in a warm Situation.

ANANAS, the Pine-apple.

The *Characters* are,

The Flower conſiſts of three oval Petals; theſe are produced from the Protuberances of the pyramidal Fruit, and are ſtretched out beyond the Empalement. Theſe have ſix Awl-ſhaped Stamina, which ſtand within the Flower, and are crowned with Spear-ſhaped Summits: The Germen is ſituated below the Flower, ſupporting a ſlender Style, crowned with a trifid Stigma. The Germen afterward becomes a Cell, in which is lodged ſeveral angular Seeds.

The *Varieties* of this are,

1. ANANAS *aculeatus, fructu ovato, carne albida. Plum.* Oval-ſhaped Pine Apple, with a whitiſh Fleſh.

2. ANANAS *aculeatus, fructu pyramidato, carne aurea. Plum.* Pyramidal Pine Apple, with a yellowiſh Fleſh; called the Sugar-loaf Pine.

3. ANANAS *folio vix ſerrato. Boerh. Ind. Alt.* 2. 83. Pine-apple with ſmooth Leaves.

4. ANANAS *lucide virens, folio vix ſerrato. Hort. Elth.* Pine-apple with ſhining green Leaves, and ſcarce any Spines on their Edges.

5 ANANAS *fructu pyramidato olivæ colore, intus aureo.* Pyramidal Olive-coloured Pine-Apple, with yellow Fleſh.

6. ANANAS *aculeatus, fructu pyramidato ex viridi flaveſcente.* The green Pine-apple.

There are ſeveral other Varieties of this Fruit, ſome of which may have been obtained from Seeds; and I doubt not but if the Seeds were ſown frequently, in the Countries where they are in Plenty, there would be as great Variety of theſe Fruit as there are of Apples or Pears in *Europe*. And this I have found true by ſome Trials which I have made by ſowing the Seeds, which have always produced a Variety of Sorts.

This Fruit (which is juſtly eſteemed for the Richneſs of its Flavour, as it ſurpaſſes all the known Fruits in the World), is produced from an herbaceous Plant, which hath Leaves reſembling thoſe of the Aloe, and are, for the moſt part, ſawed on their Edges, but are much thinner, and not ſo juicy as the Aloe: The Fruit reſembles the Cones of the Pine Tree, from whence it is ſuppoſed to have its Name.

Where this Plant is a Native, is hard to determine; but it is probably an indigenous Plant in *Africa*, where they grow in uncultivated Places in great Plenty. They have been long cultivated in the hotteſt Iſlands of the *Weſt-Indies*, where they are in great Plenty, and extraordinary Goodneſs; but it hath not been many Years in the *European* Gardens, ſo as to produce Fruit: The firſt Perſon who ſucceeded in this Affair, was Monſieur *Le Cour* of *Leyden* in *Holland*, who, after a great many Trials, with little or no Succeſs, did at Length hit upon a proper Degree of Heat and Management, ſo as to produce Fruit equally as good (though not ſo large) as thoſe which are produced in the *Weſt-Indies*, as hath been often affirmed by Perſons who have lived many Years there: And it is to this worthy Cultivator of Gardening, who did not ſpare any Pains or Expence to accompliſh it, that all the Lovers thereof are obliged, for introducing this King of Fruits amongſt them; it was from him that our Gardens in *England* were firſt ſupplied, though we have ſince had large Quantities brought from *America*. I cannot here avoid taking Notice of a common Error which prevails amongſt many People, which is, that the Plants brought from *America* are not ſo good as thoſe which came from M. *Le Cour*; but this is a great Miſtake, for were the People who ſend over theſe Plants from *America* careful to ſend the beſt Kinds, there would be found many better than thoſe cultivated by M. *Le Cour*, who had his from thence at firſt, as his Gardener aſſured me; and I have ſeen as good Fruit produced from *American* Plants, as any I have yet ſeen, and ſome three Times larger than any I ſaw in M. *Le Cour*'s Garden.

The 1ſt Sort is the moſt common in *Europe*; but the 2d is much preferable to it, the Fruit of this being larger, and much better flavoured: The Juice of this Sort is not ſo aſtringent as that of the 1ſt, ſo it may be eaten in greater Quantity with leſs Danger. This Sort frequently produces Suckers, immediately under the Fruit, whereby it may be increaſed much faſter than the common Sort; ſo that in a few Years, it may be the moſt common Sort in *England*.

The 3d Sort is preſerved by ſome curious Perſons for the Sake of Variety, but the Fruit is not worth any Thing. The 6th Sort is at preſent the moſt rare in *Europe*, there being very few of the Plants at preſent: This has been eſteemed the beſt Sort known, by ſome of the moſt curious Perſons in *America*, many of whom have thrown out all the other Sorts from their Gardens, and cultivate only this Kind. The Plants of this Sort may be procured from *Barbadoes* and *Montſerrat*.

The Sort with very ſmooth Graſs-green Leaves, was raiſed from Seeds taken out of a rotten Fruit, which came from the *Weſt-Indies* to the late *Henry Heathcote*, Eſq; from whom I received one Plant, which hath produced large Fruit: This, I am told, is what the People of *America* call the King Pine. I have ſince raiſed ſome Plants of this Kind from Seeds, which were brought me from *Jamaica*.

Theſe Plants are propagated by planting the Crowns which grow on the Fruit, or the Suckers which are produced either from the Sides of the Plants, or under the Fruit, both which I have found to be equally good; although by ſome Perſons the Crown is thought preferable to the Suckers, as ſuppoſing it will produce Fruit ſooner than the Suckers, which is certainly a Miſtake; for by conſtant Experience I find the Suckers (if equally ſtrong) will fruit as ſoon, and produce as large Fruit as the Crowns.

The Suckers and Crowns muſt be laid to dry in a warm Place for four or five Days, or more (according to the Moiſture of the Part which adhered to the old Plant or Fruit); for if they are immediately planted, they will rot. The certain Rule of judging when they are fit to plant, is by obſerving if the Bottom is healed over, and become hard; for if the Suckers are drawn off carefully from the old Plants, they will have a hard Skin over the lower Part, ſo need not lie ſo long as the Crowns, or thoſe whoſe Bottoms are moiſt. But whenever a Crown is taken from the Fruit, or the Suckers from old Plants, they ſhould be immediately diveſted of their Bottom Leaves, ſo high as to allow Depth for their Planting; ſo that they may be thoroughly dry and healed in every Part, leſt when they receive Heat and Moiſture, they ſhould periſh, which often happens when this Method is not obſerved. If theſe Suckers or Crowns are taken off late in the Autumn, or during the Winter, or early in the Spring, they ſhould be laid in a dry Place in the Stove, for a Fortnight or three Weeks before they are planted, but in the Summer Seaſon they will be fit for planting in three or four Days.

A rich good Kitchen Garden Mould, not too heavy, ſo as to detain the Moiſture too long, nor over light and ſandy, will be very proper for them without any Mixture: But where this is wanting, you ſhould procure ſome freſh Earth from a good Paſture; which ſhould be mixed with about a third Part of rotten Neats Dung, or the Dung of an old Melon or Cucumber Bed, which is well conſumed. Theſe ſhould be mixed ſix or eight Months at leaſt before they are uſed; but if it be a Year, it will be the better; and ſhould be often turned, that their Parts may be the better united, as alſo the Clods well broken. This Earth ſhould not be ſcreened very fine, for if you only clear it of great Stones, it will be better for the Plants than when made too fine. Always avoid mixing any Sand with the Earth, unleſs it be extremely ſtiff, and then it will be neceſſary to have it mixed at leaſt ſix Months or a Year before it is uſed; it muſt be frequently turned, that the Sand may be incorporated in the Earth, ſo as to divide its Parts: But you ſhould not put more than a ſixth Part of Sand, for too much is very injurious to theſe Plants.

In the Summer Seaſon when the Weather is warm, the Plants muſt be often watered, but you ſhould not give them large Quantities at a Time: Alſo be very careful, that the Moiſture is not detained in the Pots, by the Holes being ſtopped, for that will ſoon deſtroy the Plants. If the Seaſon is warm, they ſhould be watered twice a Week; but in a cool Seaſon, once will be often enough: During the Summer Seaſon, you ſhould once a Week water them gently all over their Leaves, which will waſh the Filth from them, and thereby greatly promote the Growth of the Plants.

There are ſome Perſons who frequently ſhift theſe Plants from Pot to Pot, but this is by no means to be practiſed by thoſe who propoſe to have large well flavoured Fruit; for unleſs the Pots be filled with the Roots, by the Time the Plants begin to ſhew their Fruit, they commonly produce ſmall Fruit, which have generally large Crowns on them, therefore the Plants will not require to be new potted oftener than twice in a Seaſon: The firſt Time ſhould be about the End of *April*, when the Sucker's and Crowns of the former Year's Fruit (which remained all the Winter in thoſe Pots in which they were firſt planted) ſhould be ſhifted into larger Pots, *i. e.* thoſe which were in Halfpenny, or Three-farthing Pots, ſhould be put into Penny, or at moſt Three Halfpenny Pots, according to the Size of the Plants; for you muſt be very careful not to overpot them, nothing being more prejudicial to them. The ſecond Time for ſhifting them is in the Beginning of *Auguſt*, when you ſhould ſhift thoſe Plants which are of a proper Size for fruiting the following Spring, into Two-penny Pots, which are full large enough for any of theſe Plants. At each of theſe Times of ſhifting the Plants, the Bark Bed ſhould be ſtirred up, and ſome new Bark added, to raiſe the Bed up to the Height it was at firſt made; and when the Pots are plunged again into the Bark Bed, the Plants ſhould be watered gently all over their Leaves, to waſh off the Filth, and to ſettle the Earth to the Roots of the Plants. If the Bark Bed be well ſtirred, and a Quantity of good freſh Bark added to it, at this latter Shifting, it will be of great Service to the Plants; and they may remain in the ſame Tan until the beginning of *November*, or ſometimes later, according to the Mildneſs of the Seaſon, and will require but little Fire before that Time. During the Winter Seaſon theſe Plants will not require to be watered oftener than once a Week, according as you find the Earth in the Pots to dry: Nor ſhould you give them too much at each Time, for it is much better to give them a little Water often, than to over-water them, at this Seaſon.

You muſt obſerve never to ſhift thoſe Plants which ſhew their Fruit into other Pots: for if they are removed after the Fruit appears, it will ſtop the Growth, cauſe the Fruit to be ſmaller, and retard its Ripening, ſo that many Times it will be *October* or *November* before it is ripe; therefore you ſhould be very careful to keep the Plants in a vigorous growing State, from the firſt Appearance of the Fruit, becauſe upon this depends the

Goodneſs and Size of it; for if they receive a Check after this, the Fruit is generally ſmall and ill taſted.

When you have cut off the Fruit from the Plants, whoſe Kind you are deſirous to propagate, you ſhould trim the Leaves, and plunge the Pots into a moderate hot Bed, obſerving to refreſh them frequently with Water, which will cauſe them to put out Suckers in Plenty; ſo that a Perſon may be ſoon ſupplied with Plants enough of any of the Kinds, who will but obſerve to keep the Plants in Health.

There is not any Thing which can happen to theſe Plants of a more dangerous Nature, than to have them attacked by ſmall white Inſects, which appear at firſt like a white Mildew, but ſoon after have the Appearance of Lice: Theſe attack both Root and Leaves at the ſame Time, and if they are not ſoon deſtroyed, will ſpread over a whole Stove in a ſhort Time; and in a few Weeks will entirely ſtop the Growth of the Plants, by ſucking out the nutritious Juice, ſo that the Leaves will appear yellow and ſickly, and have generally a great Number of yellow tranſparent Spots all over them. Theſe Inſects, after they are fully grown, appear like Bugs, and adhere ſo cloſely to the Leaves, as not to be eaſily waſhed off, and ſeem as if they had no Life in them. They were originally brought from *America* upon the Plants which were imported from thence, and I believe they are the ſame Inſects which have deſtroyed the Sugar Canes of late Years in ſome of the *Leeward Iſlands*. Since they have been in *England*, they have ſpread greatly in ſuch Stoves, where there has not been more than ordinary Care taken to deſtroy them. They have alſo attacked the Orange Trees in many Gardens near *London*, and have done them incredible Damage; but I do not find they will endure the Cold of our Climate in Winter, ſo that they are never found on ſuch Plants as live in the open Air. The only Method I have yet been able to diſcover for deſtroying theſe Inſects, is by waſhing the Leaves, Branches, and Stems, of ſuch Plants as they attack, frequently with Water, in which there has been a ſtrong infuſion of Tobacco Stalks, which I find will deſtroy the Inſects, and not prejudice the Plants. But this Method cannot be practiſed on the *Ananas* Plants, becauſe the Inſects will faſten themſelves ſo low between the Leaves, that it is impoſſible to come at them with a Sponge to waſh them off; ſo that if all thoſe which appear to Sight are cleared off, they will ſoon be ſucceeded by a freſh Supply from below, and the Roots will alſo be equally infeſted at the ſame Time. Therefore, wherever theſe Inſects appear on the Plants, the ſafeſt Method will be, to take the Plants out of the Pots, and clear the Earth from the Roots; then prepare a large Tub, which ſhould be filled with Water, in which there has been a ſtrong Infuſion of Tobacco Stalks; into this Tub you ſhould put the Plants, placing ſome Sticks croſs the Tub, to keep the Plants immerſed in Water. In this Water they ſhould remain twenty-four Hours; then take them out, and with a Sponge waſh off all the Inſects from the Leaves and Roots, which may be eaſily effected when the Inſects are killed by the Infuſion; then cut off all the ſmall Fibres of the Roots, and dip the Plants into a Tub of fair Water, waſhing them therein, which is the moſt effectual Way to clear them from the Inſects. Then pot them in freſh Earth, and having ſtirred up the Bark Bed, and added ſome new Tan to give a freſh Heat to the Bed, the Pots ſhould be plunged again, obſerving to water them all over the Leaves (as was before directed) a few Days after, and this ſhould be repeated once a Week during the Summer Seaſon; for I obſerve theſe Inſects always multiply much faſter where the Plants are kept dry, than in ſuch Places where the Plants are ſometimes ſprinkled over with Water, and kept in a growing State. The ſame is alſo obſerved in *America*, for it is in long Droughts that the Inſects make ſuch Deſtruction of the Sugar Canes; and in thoſe Iſlands where they have had ſeveral very dry Seaſons of late, they have increaſed to ſuch a Degree, as to deſtroy the greateſt Part of the Canes, rendering them not only unfit for Sugar, but ſo poiſon the Juice of the Plant, as to diſqualify it for making Rum, ſo that many Planters have been ruined by theſe Inſects.

As theſe Inſects are frequently brought from *America* on the *Ananas* Plants, thoſe Perſons who procure their Plants from thence, ſhould look carefully over them when they receive them, to ſee they have none of theſe Inſects on them; for if they have, they will ſoon be propagated over all the Plants in the Stove where theſe are placed: Therefore, whenever they are obſerved, the Plants ſhould be ſoaked (as was before directed) before they are planted into Pots.

It was formerly the common Practice of thoſe Perſons, who cultivated this Fruit in *Europe*, to build dry Stoves, in which they kept their Plants in Winter, placing the Pots on Scaffolds (after the Manner in which Orange Trees are placed in a Green-houſe), and in the Summer to place them in hot Beds of Tanners Bark under Frames. This was the Method practiſed in *Holland* for raiſing this Fruit which was firſt taught by Monſieur *Le Cour*'s Gardiner to thoſe Perſons to whom his Maſter ſent the Plants. But as their Culture has ſince become general in *England*, ſo there has been great Improvements made not only in the Contrivances of the Stoves, but alſo in the Culture of the Plants. By the former Method, the Plants were kept upon Shelves at leaſt four or five Months, whereby the extreme Fibres of their Roots became dry and hard; and if the Plants were too often watered, it occaſioned their rotting; ſo that during the Winter Seaſon, when the Plants ſhould be preparing their Fruit for the next Summer, they were at a ſtand, making little or no Progreſs, whereby the Fruit did not appear early enough in the Spring to ripen in Summer, nor were they ſo large.

Therefore, to remedy this Inconvenience, it is now the Practice of thoſe Perſons who are deſirous to propagate this Fruit, to erect low Stoves, with Pits therein for the hot Bed, in the Manner hereafter deſcribed and figured; theſe are built in different Ways, according to the Fancy of the Contriver. Some Perſons build them with upright Glaſſes in Front, about four Feet high, and ſloping Glaſſes over theſe, which riſe about ſix Feet high, ſo that there is juſt Height enough for Perſons to walk upright on the Back-ſide of the Bark Bed. Others make but one Slope of Glaſſes from the Top of the Stove; down to the Plate, which lies about ſix or eight Inches above the Bark Pit in the Front of the Stove; ſo that in this Stove, there is no Walk made in the Front between the Bark Pit and the Glaſſes; but the Inconveniency of watering the Plants, as alſo of coming near thoſe Plants which are placed in the Front of the Stove to clean them, has, in ſome Meaſure, brought them into Diſeſteem, ſo that few Perſons now build them, though the Expence is much leſs than of the other Kind of Stoves; but the Figures and Deſcriptions which are hereafter exhibited under the Article of Stove, will be ſufficient for any Perſon to build either of the Sorts. One of theſe Stoves about twenty-five Feet long in the Clear, with the Tan Pit reaching from End to End, and ſix Feet and a half wide, will contain about a hundred Plants; ſo that whoever is deſirous to have this Fruit, may eaſily proportion their Stove to the Quantity of Fruit they are willing to have.

But it will be alſo neceſſary to have a Bark Pit under a deep Frame, in order to raiſe the young Plants; for in this Bed you ſhould plunge the Suckers, when they are taken from the old Plants, as alſo the Crowns which come from the Fruit, ſo that this Frame will be as a Nurſery to raiſe the young Plants to ſupply the Stove: Theſe Plants ſhould not remain in theſe Frames longer than till the Beginning of *November*, unleſs the Frame is built with Brick-work and Flues in it to warm the Air (in the Manner hereafter deſcribed and figured), which are very uſeful, as Nurſeries, to keep the young Plants till they are of a proper ſize to produce Fruit; ſo that you may keep thoſe either warmer or cooler than the Stove, according as the Plants may require, ſo that the Stove may be every Autumn filled only with bearing Plants, whereby a much greater Quantity of Fruit may be annually produced, than can be where young and old Plants muſt be crowded into the ſame Stove: But where there are no Conveniencies of this Kind, the young Plants about the Middle or latter End of *October*, muſt be removed into the Stove, and being ſmall, may be crowded in among the larger Plants; for as they will not grow much during the Winter Seaſon, they may be placed very cloſe together. The Beginning of *March*, where there is no Nurſery for the young Plants, they muſt be removed out into the hot Bed again, which ſhould be prepared a Fortnight before, that the Tan may have acquired a proper Heat: But you ſhould be careful that the Tan be not too hot, for that might ſcald the Fibres of the Plants, if they are ſuddenly plunged therein. Therefore if you find the Bark too hot, you ſhould not plunge the Pots above two or three Inches into the Tan, letting them remain ſo until the Heat of the Tan is a little abated, when you ſhould plunge them down to their Rims in the Bed. If the Nights continue cold after theſe Plants are removed into the Bed, you muſt carefully cover the Glaſſes with Mats; otherwiſe by coming out of a warm Stove, they may receive a Check, which will greatly retard their Growth, which muſt be carefully avoided; becauſe the ſooner the Plants are ſet growing in the Spring, the more Time they will have to gain Strength, in order to produce large Fruit the following Seaſon.

You ſhould not plunge the Pots too cloſe together in this Frame, but allow them a proper Diſtance, that the lower Part of the Plants may increaſe in Bulk, for it is on this that the Magnitude of the Fruit depends; becauſe when the Plants are placed too cloſe, they draw up very tall, but do not obtain Strength; ſo that when they are taken out of the Bed, the Leaves are not able to ſupport themſelves; but all the outward long Leaves fall down, leaving the ſmaller middle Leaves naked, and this ſometimes will cauſe them to rot in the Centre. Obſerve alſo when the Sun is very warm, to raiſe the Glaſſes of the hot Bed with Stones, to let out the Steam of the Bed and to admit freſh Air; for one Neglect of this Kind in a very hot Day, may deſtroy all the Plants, or ſo ſcald them, that they will not get over it in many Months. It will be alſo very proper, in extreme hot Weather, to ſhade the Glaſſes in the Middle of the Day with Mats; for the Glaſſes, lying ſo near the Leaves of the Plants, will occaſion a prodigious Heat at ſuch Times.

During the Summer Seaſon, theſe Plants muſt be frequently watered, giving them but little each Time; and in hot Weather, they muſt have free Air admitted to them every Day, from Ten o'Clock till Four; for, if they are kept too cloſe, or have too much Wet, they will receive a Check in their Growth, when the Inſects will immediately ſpread over them; there are generally ſome of theſe Inſects on all theſe Plants, which do not much Injury to the Plants while they are in a growing State; but whenever they are unhealthy, the Inſects multiply greatly, and contribute to their Decay. There are ſome Perſons who regulate the Heat of their Stoves by Thermometers in Summer, but at that Seaſon this is unneceſſary, for the outward Air in hot Weather is frequently greater than the Ananas Heat marked on the Thermometers, ſo that the Heat of the Stoves at that Seaſon will be much greater. The Uſe of the Thermometer is only in Winter, during the Time the Fires are continued, by which it is eaſy to judge when to increaſe or diminiſh the Fires; for at that Seaſon, the Stoves ſhould not be kept to a greater Warmth than five or ſix Diviſions above Ananas, nor ſuffered to be more than as many Diviſions below it. In Winter the Plants muſt have leſs Water, but they will require to have it repeated once a Week, giving them but little each Time: When the Plants are placed into the Tan for the Winter Seaſon (which ſhould be done about the Beginning of *October*), the Bed ſhould be renewed, adding two Thirds of new Tan, to one Third of the old. If this be well mixed, and the new Tan is good, the Bed will maintain a proper Degree of Warmth till *February*, at which Time it will be proper to ſtir up the Bed, and add a Load or two of new Tan, ſo as to raiſe it as much as it ſunk ſince Autumn; this will give a freſh Heat to the Bed, and keep the Plants growing, which will be abſolutely neceſſary as the Fruit will now begin to appear, otherwiſe the Fruit will not be large; for if they receive any Check at this Time, it will greatly injure them.

In *April* it will be proper to ſtir up the Tan again, and if the Bed has ſunk ſince the laſt ſtirring, it will be proper to add ſome freſh Tan to it; this will renew the Warmth of the Bed, and forward the Fruit. At this Time it will be proper to ſhift the young Plants, which are deſigned to produce Fruit the following Year; the Tan Bed into which theſe are plunged muſt be renewed, in order to forward their Growth, that they may have Strength enough by Autumn to produce good Fruit, for this is the principal Care required.

Thoſe Plants which ſhew their Fruit early in *February* will ripen about *June*; ſome Sorts are at leaſt a Month or five Weeks longer in ripening their Fruit than others, from the firſt Appearance of the Fruit: But the Seaſon in which it is in the greateſt Perfection, is from the Beginning of *May* to the End of *September*; though in *March*, *April*, and *October*, I have frequently eaten this Fruit in pretty good Perfection; but the Plants have been in perfect Health, otherwiſe they ſeldom are well flavoured.

The Method of judging when the Fruit is ripe, is by the Smell, and from Obſervation; for as the ſeveral Sorts differ from each other in the Colour of their Fruit, that will not be any Direction when to cut them; nor ſhould they remain ſo long as to become ſoft to the Touch before they are cut, for then they are flat and dead, alſo when cut long before they are eaten: Therefore the ſureſt Way to have this fruit in Perfection, is to cut it the ſame Day it is eaten; but it muſt be cut early in the Morning, before the Sun has heated the Fruit, obſerving to cut the Stalk as long to the Fruit as poſſible, and lay it in a cool, but dry Place, preſerving the Stalk and Crown unto it, until it is eaten.

That Sort with green Fruit, if ſuffered to ripen well, is of an Olive Colour; but there are ſome Perſons who cut them before they are ripe, when they are not fit to be eaten, for no other Reaſon, but to have them green: and although many Perſons have much recommended this Sort for its excellent Flavour, yet I think the Sugar Loaf Sort is to be preferred to it.

This Sugar Loaf Sort is eaſily diſtinguiſhed from all the other, by its Leaves having purple Stripes on their Inſide the whole Length. The Fruit is of a paler Colour than the others when ripe, inclining to a Straw Colour. This Sort was brought from *Braſil* to *Jamaica*, where it is eſteemed far beyond the other Kinds.

The next in Goodneſs to this, is what the Inhabitants of the Iſlands in *America* call the *Montſerrat* Pine; the Leaves of this are of a dark Brown, inclining to Purple on their Inſide; the Protuberances of the Fruit are larger and flatter than thoſe of the common Sort. I raiſed ſeveral Plants of this Sort from Seeds which I received from the Iſland of *St. Thomas*, where this Fruit is in greater Perfection than any of the *Britiſh* Iſlands.

ANAPODOPHYLLON. *See* Podophyllum.

ANASTATICA. *Lin. Gen. Pl.* Roſe of *Jericho*.

The *Characters* are,

It hath a four leaved Empalement, which is deciduous. The Flower hath four roundiſh Petals placed in Form of a Croſs. It hath ſix Awl-ſhaped Stamina, two being ſhorter than the other which are turned inward, the others are erect, theſe are crowned with roundiſh Summits; in the Center is ſituated a bifid Germen, ſupporting an Awl-ſhaped Style, which is the Length of the Stamina, and crowned with a round Stigma. The Germen becomes a ſhort Capſule, with two Cells, having in each a ſingle Seed.

We know but one *Species* of this Genus, *viz.*

Anastatica. *Hort. Cliff.* 328. Roſe of *Jericho*.

This Plant grows naturally on the Sands near the Borders of the *Red Sea*, and in *Syria*. It is a low annual Plant, dividing into many irregular woody Branches near the Root; at each Joint is placed a ſingle, oblong, hoary Leaf, and at the ſame Places come out ſmall ſingle Flowers of a whitiſh green Colour, compoſed of four ſmall Leaves, placed in form of a Croſs, like the other Plants of this Claſs. Theſe are ſucceeded by ſhort wrinkled Pods, having four ſmall Horns; theſe open in two Cells, in each of which is lodged a ſingle brown Seed.

It had the Epithet of *Roſa Mariæ* given to it by the Monks, who ſuperſtitiouſly ſuppoſed that the Flowers open on the Night that our Saviour was born. But the Truth is, that the dry woody Plant being ſet for ſome Time in Water, will dilate and open ſo as to diſcloſe the Seed Veſſels and Seeds. This I have ſeen done when the Plants have been many Years gathered, ſo that there are ſeveral curious Perſons who preſerve them among their Curioſities, for this ſingular Property.

This Plant is propagated by Seeds, which ſhould be ſown the Beginning of *April*, on a Border of light ſandy Earth, where it is deſigned to remain, for it will not bear tranſplanting. When the Plants come up, they ſhould be thinned, leaving them about ſix Inches diſtant from each other, and obſerve to keep them clean from Weeds, this is all the Care they require. If the Seaſon proves favourable, the Plants will flower in *Auguſt*, but unleſs the Autumn proves warm and dry, they will not ripen their Seeds in *England*, nor could I rarely procure Seeds from thoſe Plants which were raiſed in Autumn, for if much Rain happens when the Plants are in Flower, they never perfect any Seeds.

ANCHUSA. *Lin. Gen.* 167. Bugloſſum. *Tourn. Inſt.*

The *Characters* are,

The Empalement of the Flower is oblong, taper, and permanent; this is cut into five acute Segments which are erect. The Flower is of one Leaf, having a cylindrical Tube the Length of the Empalement; at the Brim it is cut into five obtuſe upright Segments, which ſpread open, but the Chaps are cloſed, and have five prominent little Scales. There are five ſhort Stamina in the Chaps of the Flower, which are crowned with oblong Summits. In the Bottom of the Flower are ſituated four Germen, having a ſlender Style, crowned with an obtuſe Stygma. The Germen afterwards becomes four oblong blunt Seeds ſhut up in the Empalement.

The *Species* are,

1 Anchusa *foliis lanceolatis hirſutis, floribus capitatis axillaribus pedunculis longiſſimis.* Alkanet with rough Spear-ſhaped Leaves, and Flowers collected in a Head, having long Foot Stalks. Greater Garden Bugloſs.

2. Anchusa *racemis ſubnudis conjugatis. Prod. Leyd.* 408. Alkanet with conjugated Spikes half naked. Perennial wild Borage with a Carmine Flower.

3. Anchusa *ſtrigoſa foliis linearibus dentatis pidicellis bracteâ minoribus calycibus fructiferis inflatis.* Alkanet with narrow indented Leaves, ſmall Foot Stalks to the Branches, and a ſwelling Empalement over the Seeds. *Portugal* Bugloſs with a waving Viper's Bugloſs Leaf.

4. Anchusa *ramis floribuſque alternis axillaribus bracteis ovatis.* Alkanet with Branches and Flowers growing alternately from the Wings of the Stalks, and oval Branches.. Eaſtern Bugloſs with a yellow Flower.

5. Anchusa *floribus ſparſis caule glabro. Lin. Sp. Plant.* 133. Alkanet with Flowers growing thinly and a ſmooth Stalk. Small yellow Alkanet of *Virginia*; called by the Inhabitants *Puccoon*.

6. Anchusa *pedunculis diphyllis capitatis. Lin. Sp. Plant.* 134. Alkanet with Foot Stalks having two Leaves. Broad leaved Ever-green Borage.

7. Anchusa *foliis lanceolatis verrucoſis ſemiamplexi-*

caulibus, floribus capitatis, caule procumbente. Alkanet with warted Spear-ſhaped Leaves embracing the Stalk half round, Flowers growing in a Head and a trailing Stalk.

8. ANCHUSA *foliis lanceolatis ſpicis imbricatis ſecundis. Hort. Cliff.* 46. Alkanet with Spear-ſhaped Leaves and imbricated fruitful Spikes. *Bugloſſum creticum majus, &c.* Greater *Candia* Bugloſs with a purpliſh blue Flower.

9. ANCHUSA *foliis longis hirſutis, floribus capitatis reflexis pedunculis longiſſimis.* Alkanet with long hairy Leaves, and Flowers collected into Heads which are reflexed, and very long Foot Stalks.

The 1ſt Sort is the Bugloſs, whoſe Flowers are ordered to be uſed in Medicine. This ſends up Stalks about two Feet and a half high, which have oblong rough Leaves, placed alternately, at the Extremity of the Shoots. The Flowers are produced in Cluſters, which are of a fine blue Colour; theſe come out with Foot Stalks from the Wings of the Leaves, and are collected into ſmall Heads. The Flowers are of one Leaf, having a long Tube, and ſpread open at the Top in Shape of a Funnel. After the Flower is paſt, it is ſucceeded by four naked Seeds, ſituated at the Bottom of the Empalement, and drop out as they ripen.

The Roots of this Sort ſeldom continue longer than two or three Years, eſpecially in good Ground, for they are ſubject to rot in Winter, unleſs when they happen to grow in Rubbiſh, or out of an old Wall, where they will live ſeveral Years; in ſuch Places the Plants are ſtinted in their Growth, ſo their Branches are firmer and not ſo full of Juice as thoſe which grow in better Soil. The Plants may be eaſily propagated by Seeds ſown either in the Spring or Autumn, upon a Bed of light ſandy Earth; and when the Plants are ſtrong enough to remove, they ſhould be planted in Beds at two Feet Diſtance, obſerving, if the Seaſon proves dry, to water them till they have taken Root, after which Time they will require no farther Care but to keep them clean from Weeds. The Plants which come up in the Autumn, will flower the following *June*, and ripen their Seeds in *Auguſt*; but thoſe which are ſown in the Spring, do not often flower the ſame Year, or if they do, it is late in the Seaſon, ſo will not ripen their Seeds. If the Seeds of this Plant are permitted to ſcatter, the Plants will riſe in Plenty, which may be managed in the Manner before directed. There is a Variety of this with white Flowers, but this will not retain its Difference from Seeds.

The 2d Sort grows to the Height of two Feet in Gardens, but in Places where it grows wild, is rarely more than a Foot and a Half high. The Leaves of this are narrow, and leſs hairy than thoſe of the firſt; the Spikes of Flowers come out double, and have no Leaves about them; the Flowers are ſmall, and of a red Colour. The Roots will continue three or four Years in poor Land.

The 3d Sort is a biennial Plant, which periſhes ſoon after the Seeds are ripe. It grows two Feet high, and ſends out many lateral Branches, which are garniſhed with long narrow rough Leaves, waved on their Edges: The Flowers are of a bright blue Colour, and grow in an imbricated Spike; after theſe fall, the Empalement turns to a ſwollen Veſſel incloſing the Seeds.

The 4th Sort is a perennial Plant, with long trailing Branches which lie on the Ground; the under Leaves are long, broad, and hairy, but theſe diminiſh as they are nearer the Top, and thoſe which come out on the Spikes between the Flowers are ſhort and roundiſh; they are yellow, and about the Size of thoſe of the common Bugloſs; there is a Succeſſion of them on the ſame Plants great Part of the Year, which renders them more valuable. This, though a Native of the *Levant*, is hardy enough to live in the open Air in *England*, if it hath a dry ſandy Soil. It may be propagated by Seeds in the ſame Manner as the 1ſt Sort, and if they are permitted to ſcatter, the Plants will riſe without Care.

The 5th Sort is a Native of *North-America*, where it grows naturally in the Woods, and being an early Plant, generally flowers before the new Leaves come out on the Trees; ſo that in ſome of the Woods, where this Plant abounds, the ſurface of the Ground ſeems covered with its bright yellow Flowers. It is known in that Country by the Title of *Puccoon*. It is perennial, and ſeldom riſes a Foot high in good Ground, but not above half that Height, where the Soil is poor; the Flowers grow in looſe Spikes, upon a ſmooth Stalk. This is propagated by Seeds, ſown in Autumn.

The 6th Sort is a very hardy perennial Plant, with weak trailing Branches; theſe are garniſhed with broad, rough, deep green Leaves; the Flowers are blue, and come out between the Leaves on the Spike, like the fourth Sort; the Plants frequently grow out of the Joints of old Walls, in thoſe Places where any of the Plants have been near; for when the Seeds are permitted to ſcatter, there will be an abundant Supply of the Plants. Theſe flower great Part of the Year.

The 7th Sort is a low trailing annual Plant, whoſe Branches ſeldom extend more than ſix Inches; theſe lie on the Surface of the Ground, and are thinly ſet with Spear-ſhaped ſmall warted Leaves, which half ſurround the Stalk at their Baſe. The Flowers are ſmall, of a bright blue Colour, and are collected into ſmall Bunches at the Extremity of the Branches. The Plants periſh ſoon after their Seeds are ripe, which if permitted to ſcatter, the Plants will come up better than when they are ſown, and ſhould remain in the Places where they come up.

The 8th Sort riſes near as high as the firſt, to which it bears great Reſemblance in its Leaves and Branches; but the Flowers grow on long Spikes coming out *imbricatim*, like the Tiles on a Houſe in which it differs from that. There are two Varieties of this, one with a white, and the other a red Flower. This Plant grows naturally in the *Levant*, but is equally hardy with the 1ſt Species, and may be cultivated in the ſame Manner.

The 9th Sort is a perennial Plant, with broad rough Leaves, like thoſe of the 6th; the Branches grow more erect, and the Flowers are of a bright azure Colour, collected into Spikes, coming out ſingly from between the Leaves. This is a hardy Plant, and may be propagated in the ſame Manner as the former.

ANCHUSA RADICE RUBRA. *See* Lythoſpermum.

ANDRACHNE, Baſtard Orpine.

The *Characters* are,

There are male and female Flowers on the ſame Plant. The male flower hath a five leaved Empalement, which is equal and withers. The Flower is compoſed of five ſlender Leaves indented at the Top, which are ſhorter than the Empalement. At the Bottom of each Petal is ſituated an her-

baceous Nectarium, to which the five ſlender Stamina are joined; theſe are crowned with ſingle Summits. The female Flowers come out from the Wings of the Stalk near the male. Theſe have a permanent five leaved Empalement, but no Petals; there are five Nectariums as in the male, and a globular Germen ſupporting three ſlender Styles which are bifid, crowned with a round Stigma. The Germen turns to a three cornered globular Capſule having three Cells, in each of which are two triangular obtuſe Seeds.

The *Species* are,

1. ANDRACHNE *procumbens herbacea. Lin. Sp. Plant.* 1014. Herbaceous trailing *Andrachne.* Baſtard Orpine with trailing Branches and a white Flower.

2. ANDRACHNE *caule erecto herbaceo, foliis pinnatis floriferis, foliolis alternis. Andrachne* with an upright herbaceous Stalk, pinnated Leaves bearing the Flowers, and the ſmall Lobes placed alternately.

3. ANDRACHNE *foliis lanceolatis acuminatis caule arboreo.* Tree *Andrachne* with Spear-ſhaped pointed Leaves.

4. ANDRACHNE *foliis ovatis, petiolis florum longiſſimis, caule arboreo. i. e. Andrachne* with oval Leaves, long Foot Stalks to the Flowers, and a tall woody Stem.

5. ANDRACHNE *foliis ovatis obtuſis ſubtus incanis caule arboreo. i. e.* Tree *Andrachne* with oval blunt Leaves, white on their under Side.

The 1ſt Sort is a low Plant whoſe Branches trail upon the Ground. The Leaves are ſmall, of an oval Shape, ſmooth, and of a Sea-green Colour. It is found wild in ſome Parts of *Italy,* and in the *Archipelago,* from whence Dr. *Tournefort* ſent the Seeds to the Royal Garden at *Paris.* Being a Plant of no great Beauty, it is ſeldom cultivated, but in Botanic Gardens for Variety. If the Seeds are ſown on a Bed of common Earth in Autumn, ſoon after they are ripe, the Plants will come up the Spring following, and produce Flowers and Seeds; but if it is ſown in the Spring, the Seeds will often remain in the Ground until the next Year, before they come up. This Plant doth not bear tranſplanting well, therefore ſhould be ſown where it is to remain; and will require no other Culture, but to keep the Plants clear from Weeds. It ſhould have a light dry Soil and a warm Situation; this ſeldom continues longer than two Years.

The 2d Sort grows about one Foot high, with an upright herbaceous Stalk, divided into ſeveral Branches; theſe have long winged Leaves, placed alternately, each being compoſed of many oval Lobes (or ſmall Leaves) growing alternately. On the lower Side of the Mid-rib, the Flowers are produced the whole Length, hanging downward, and cloſely joined to it. Theſe are compoſed of five ſmall whitiſh Petals, at the Bottom of each is ſituated a Nectarium, each ſupporting a Stamina, (in the male Flowers) which is crowned by obtuſe Summits; the female Flowers have the ſame Structure, but inſtead of Stamina, the Nectariums have a trifid Style. The Germen afterward turns to a tricapſular Veſſel, having three Cells, each having a ſingle Seed.

This is a Native of the Iſlands in *America,* but particularly grows in great Plenty in *Barbadoes*; from which Place I have not received one Tub of Earth with other Plants, in which this has not grown up as a Weed, and by this Way the Plant was firſt obtained in *England*; for the Seeds ſcatter as ſoon as they are ripe, ſo that unleſs they are carefully watched, they will be loſt; but as theſe fall on the neighbouring Pots, ſo the Plants generally come up in Plenty, where they are placed in a Stove, being too tender to thrive in the open Air in this Country. It ſeldom lives through the Winter, but the Plants which ariſe from the ſcattered Seeds, flower in *July,* and the Seeds ripen ſoon after; ſo that they ſeldom fail to ſow themſelves in Plenty, therefore require no other Care, but to tranſplant them into ſmall Pots, and treat them as other tender exotic Plants.

The three other Sorts grow to the Height of twenty Feet, with ſtrong woody Stems, and divided into many Branches; theſe have ſingle Leaves, which are placed alternately on the Branches. The Flowers grow on the under Side of the Branches, thoſe of the fourth having long Foot Stalks, by which they hang downward. The other two have very ſhort ones, but the Flowers of all the Sorts have the ſame Poſition. The Fruit of the laſt Sort is as large as a Walnut, having a hard woody Shell, divided into three Cells, in which the Seeds are lodged.

Theſe Sorts were diſcovered by the late Dr. *William Houſtoun,* the 3d at *La Vera Cruz,* the 4th and 5th at *Campeachy,* from whence he ſent their Seeds to *England.*

ANDROMEDA, *Lin. Gen. Plant.* 485.

The *Characters* are,

The Empalement of the Flower is cut into five ſmall acute Segments, this is coloured and permanent. The Flower is of one Leaf, is oval and Bell-ſhaped, and divided into five Parts at the Brim, which are reflexed. It hath ten Awl-ſhaped Stamina, which are ſhorter than the Petals to which they are fixed; theſe are crowned with nodding Summits having two Horns. In the Center of the Flower is ſituated a round Germen, ſupporting a cylindrical Style, which is longer than the Stamina, and crowned with a blunt Stigma. The Germen afterward turns to a round pentagonal Veſſel having five Cells, which are filled with ſmall round Seeds.

The *Species* are,

1. ANDROMEDA *pedunculis aggregatis, corollis ovatis, foliis alternis lanceolatis revolutis. Lin. Sp. Plant.* 393. *i. e. Andromeda* with aggregate Foot Stalks, oval Petals and Spear-ſhaped Leaves growing alternately.

2. ANDROMEDA *pedunculis aggregatis corollis cylindricis foliis alternis ovatis integerrimis, Lin. Sp. Plant.* 393. *Andromeda* with aggregate Foot Stalks, cylindrical Flowers, and oval entire Leaves placed alternately.

3. ANDROMEDA *racemis ſecundis nudis paniculatis, corollis ſubcylindricis foliis alternis oblongis crenulatis. Lin. Andromeda* with naked fruitful looſe Spikes, cylindrical Flowers, and oblong crenated Leaves placed alternately.

4. ANDROMEDA *racemis ſecundis nudis corollis rotundo-ovatis. Lin. Sp. Plant.* 394. *Andromeda* with naked fruitful Spikes, and oval roundiſh Flowers. Commonly called Sorrel Tree in *Carolina.*

5. ANDROMEDA *racemis ſecundis foliaceis corollis ſubcylindricis, foliis alternis lanceolatis obtuſis punctatis. Lin. Sp. Plant.* 394. *Andromeda* with leafy fruitful Spikes, cylindrical Flowers, and obtuſe Spear-ſhaped Leaves, with Punctures placed alternately.

The 1ſt Sort is a low Plant which grows naturally on Bogs in the Northern Countries, but is with Difficulty preſerved in Gardens; and having little Beauty, is ſeldom cultivated except in Botanic Gardens. I received the Seeds from *Peterſburg,* which came up in the *Chelſea*

Garden, but continued only one Year.

The 2d Sort grows naturally in *North America* : This is a low Shrub, which ſends out many woody Stalks from the Root, which are garniſhed with oval Leaves placed alternately ; the Flowers are collected in ſmall Bunches : Theſe are ſhaped like thoſe of the Strawberry Tree, and are of an herbaceous Colour. They appear in *June* and *July*, and ſometimes are ſucceeded by Fruit, which ſeldom ripen in *England*.

The 3d Sort is alſo a Native of *North America*. This Shrub grows about four Feet high, ſending out ſeveral Branches, clothed with oblong Leaves placed alternately ; the Flowers grow in looſe Spikes from the Ends of the Branches ; theſe are of the Pitcher Shape, like thoſe of the Arbutus, but a little longer. They appear in *July*, but do not produce Seeds in this Country.

The 4th Sort grows naturally in *Virginia* and *Carolina* ; in the latter it is much larger, the Climate being warmer ; ſo many of the Trees and Shrubs grow much higher there. In *Virginia*, this is a Shrub growing ten or twelve Feet high, but in *Carolina* it riſes twenty Feet. The Branches are very ſlender, bending downward ; theſe are garniſhed with Leaves placed alternately, which are oblong and pointed: The Flowers grow in long naked Spikes, coming out from the Sides of the Branches, which are of an herbaceous Colour, and are ranged on one Side of the Stalk ; they are oval, and ſhaped like a Pitcher.

The 5th Sort grows naturally in *Siberia*, alſo in *North America* ; it is a low Shrub and grows on moſſy Land, ſo is difficult to keep in Gardens. The Leaves are ſhaped like thoſe of the Box Tree and of the like Conſiſtence, having ſeveral ſmall Punctures on them ; the Flowers grow in ſhort Spikes from the Extremity of the Branches : They are produced ſingle between two Leaves, are white and of a cylindrical Pitcher Shape.

All the Sorts, except the 4th, are very hardy, and delight in moiſt Ground ; they increaſe by their creeping Roots, which put up Suckers at a Diſtance, and may be taken off with Roots, and tranſplanted where they are to remain, for they do not bear to be often removed.

The 4th Sort requires to be ſheltered from hard Froſt in Winter, and in Summer ſhould be often watered. It is a difficult Plant to keep in Gardens, as it grows naturally on boggy Places, and requires a greater Heat than that of this Climate. It may be propagated by Seeds from *America*, where it is known by the Name of Sorrel Tree.

ANDROSACE. There is no *Engliſh* Name for it.

The *Characters* are,

The Flowers grow in an Umbel, at the Bottom of the Foot Stalks ; they have a many leaved general Involucrum. Each Flower hath a five cornered Empalement of one Leaf, ſlightly indented at the Top in five acute Points, this is permanent ; the Flower is of one Leaf, having an oval Tube, incloſed by the Empalement, but is plain at the Brim, where it is divided into five Parts. It hath five ſmall Stamina within the Tube, which are crowned with oblong erect Summits. In the Center is ſituated a round Germen, ſupporting a ſhort ſlender Style crowned by a globular Stigma ; the Empalement afterward becomes a round Capſule of one Cell opening in five Parts, which is full of round Seeds.

The *Species* are,

1. ANDROSACE *perianthiis maximis. Hort. Upſal.* 36. *Androſace* with the largeſt Empalement. Common broad leaved annual *Androſace*.

2. ANDROSACE *foliis lanceolatis dentatis glabris perianthiis angulatis corollâ brevioribus. Flor. Suec.* 160. *Androſace* with Spear-ſhaped Leaves, which are ſmooth and indented, and an angular Empalement ſhorter than the Petals. Spring Chickweed with Heads like *Androſace*.

3. ANDROSACE *foliis piloſis perianthiis hirſutis. Lin. S. Pl.* 142. *Androſace* with hairy Leaves and Empalement. *Alpine* Hairy Houſleek with a milk white Flower.

4. ANDROSACE *foliis ciliatis. Lin. Sp. Plant.* 142. *Androſace* with glittering Leaves.

5. ANDROSACE *foliis linearibus glabris, umbellâ involucris multoties longiore. Lin. Sp. Plant.* 142. *Androſace* with narrow ſmooth Leaves, and the Umbel much longer than the Involucrum. Perennial *Androſace* of the *Alps*, with a narrow ſmooth Leaf and a ſingle Flower.

6. ANDROSACE *foliis ſubulatis glabris umbellâ involucris breviore. Lin. Sp. Plant.* 142. *Androſace* with ſmooth Awl-ſhaped Leaves and the Involucrum ſhorter than the Umbel. Perennial *Alpine Androſace* with a narrow ſmooth Leaf and many Flowers.

The 1ſt Sort grows naturally in *Auſtria* and *Bohemia* amongſt the Corn : This hath broad Leaves which ſpread near the Ground, from the Center of theſe the Foot Stalks ariſe, which are terminated by the Umbel of Flowers, like thoſe of the Auricula ; under the Umbel of Flowers is a large Empalement, which is permanent ; the Flowers are compoſed of five ſmall white Petals ; theſe appear in *April* and *May*, the Seeds ripen in *June*, and the Plants ſoon after periſh.

The other Sorts are much ſmaller than this, ſome of them ſeldom growing more than three Inches high, and have very ſmall Flowers, ſo make little Appearance. They grow naturally on the *Alps* and *Helvetian* Mountains, alſo in *Siberia*. Theſe are only preſerved in Botanic Gardens for the Sake of Variety, and all the Sorts except the firſt ſhould have a ſhady Situation.

The Seeds of all the Sorts ſhould be ſown ſoon after they are ripe, otherwiſe they ſeldom grow the ſame Year.

They flower uſually the Beginning of *April*, and their Seeds are ripe the End of *May* ; which, if permitted to ſcatter, will come up, and often ſucceed better than thoſe which are ſown. The annual Sorts periſh as ſoon as the Seeds are ripe, but the others will live in an open Border ſeveral Years, and require no other Care, but to keep them clean from Weeds.

ANDROSÆMUM. *See* Hypericum.

ANDRYALA. *Lin. Gen. P.* 820. Downy Snow-thiſtle.

The *Characters* are,

It hath a ſhort round hairy Empalement, cut into many equal Segments; the Flowers are compoſed of many hermaphrodite Flowers, which are uniform, and lie over each other ; theſe are of one Leaf, ſtretched out like a Tongue on one Side. There are five Stamina in the Flowers ; theſe are crowned by cylindrical Summits which are tubulous. The Germen is ſituated at the Bottom of each Floret, with a ſlender Style crowned by two reflexed Stigma. The Germen afterward becomes a ſingle oval Seed, crowned with Down.

The *Species* are,

1. ANDRYALA *foliis integris. Guett. Hort. Up.* Downy Sowthiſtle with whole Leaves.

2. ANDRYALA *foliis dentato-haſtatis. L. S. P.* Downy Sowthiſtle with indented Spear-ſhaped Leaves.

The 1ſt is an annual Plant, which grows naturally in the South of *France*, *Spain*, and *Italy*, and is preſerved in Botanic Gardens for the Sake of Variety. This grows one Foot and a Half high, with woolly branching Stalks, having Leaves ſcatteringly ſet on them; which are oblong and downy. The Flowers are produced in ſmall Cluſters at the Top of the Stalks, which are yellow, and like thoſe of the Sowthiſtle, ſo do not make any great Appearance. It is eaſily raiſed by Seeds, which ſhould be ſown in Spring, where the Plants are to remain, and will require no other Culture but to thin them where too cloſe, and keep them clean from Weeds. It flowers in *July*, and the Seeds ripen in *September*.

The 2d is a perennial Plant, which grows naturally in *Spain*, from whence and from the *Cape of good Hope*, I received the Seeds. The Leaves of this Plant are extremely white, and much indented on their Edges; the Flower Stalks grow about a Foot high, having ſmall Cluſters of yellow Flowers, which appear in *July*; the Seeds ſometimes ripen in *England*. The Roots creep, by which the Plants may be propagated. They love a light dry Soil, in which they will live in the open Air.

ANEMONE. Wind-flower.

The *Characters* are,

The Flower is naked having no Empalement, and conſiſts of two or three Orders of Leaves or Petals, which are oblong and diſpoſed in three Series over each other. It hath a great Number of ſlender Stamina which are ſhorter than the Petals, and are crowned by double erect Summits; between theſe are ſituated many Germen, collected into a Head, ſupporting a pointed Style crowned with a blunt Stigma. The Germen becomes ſo many Seeds incloſed with a Down which adhere to the Foot Stalk, and form an obtuſe Cone.

The *Species* are,

1. ANEMONE *pedunculo nudo ſeminibus ſubrotundis hirſutis. L. S. P.* 540. *Anemone* with a naked Stalk and round hairy Seeds. Wild *Anemone* with a large white Flower.

2. ANEMONE *ſeminibus acutis foliolis inciſis caule unifloro. Hort. Cliff.* 224. *Anemone* with pointed Seeds, cut Leaves and a ſingle Flower. Wild or Wood *Anemone* with a large Flower. *Anemonoides Boerh. Ind. Alt.*

3. ANEMONE *ſeminibus acutis foliolis inciſis petalis lanceolatis numeroſis. Lin. Sp. Plant.* 541. *Anemone* with pointed Seeds, cut Leaves, and many Spear-ſhaped Flower Leaves. Wood *Anemone* with a blue Flower.

4. ANEMONE *pendunculis alternis longiſſimis fructibus cylindricis ſeminibus hirſutis muticis. Anemone* with very long alternate Foot Stalks and cylindrical Spikes of hairy Seeds. Small white flowering *Virginia Anemone*.

5. ANEMONE *foliis radicalibus ternato-decompoſitis, involucro folioſo. Lin. Sp. Plant.* 539. *Anemone* with lower Leaves decompounded, and a leafy Involucrum. Narrow leaved *Anemone* with a ſingle Flower.

6. ANEMONE *foliis digitatis. Lin. Sp. P. Anemone* with fingered Leaves. Broad leaved Garden *Anemone*.

The 1ſt Sort grows naturally in *Germany*; this approaches near to our Wood *Anemone*, but the Seeds of it are round and hairy; the Flower is large and white, but having little Beauty, is ſeldom planted in Gardens.

The 2d Sort grows wild in the Woods in many Parts of *England*, where it flowers in *April* and *May*, making a pretty Appearance in thoſe Places where they are in Plenty. The Roots of this may be taken up when their Leaves decay, and tranſplanted in Wilderneſſes, where they will thrive and increaſe greatly, if not diſturbed; and in Spring, before the Trees are covered with Leaves, they will have a very good Effect, in covering the Ground and making a pleaſing Variety at that Seaſon.

The 3d Sort is found growing naturally in ſome Parts of *England*, but particularly at *Wimbledon* in *Surrey*, in a Wood near the Manſion Houſe, in great Plenty; but it is not certain that they were not originally planted there, as they are not found in any other Place in that Neighbourhood. This Sort flowers at the ſame Time with the former, and when intermixed with them, make a fine Variety. This may be tranſplanted from the Woods as the former.

There are ſome of theſe two Sorts with double Flowers, which have been obtained from Seeds. Theſe make a finer Appearance, and continue longer in flower than the ſingle Sorts, but are only to be procured from the Gardens, where they are cultivated. As theſe are only ſeminal Varieties, ſo I have not enumerated them.

The 4th Sort grows naturally in *North America*, from whence the Seeds are ſent to *England*. This is very hardy, and produces Plenty of Seeds in *England*, but having little Beauty, ſcarce deſerves a Place in Gardens.

The 5th and 6th Sorts are Natives of the *Eaſt*, from whence their Roots were brought originally; but have been ſo greatly improved by Culture, as to render them ſome of the chief Ornaments of our Gardens in Spring. The principal Colours of theſe Flowers are Red, White, Purple, and Blue, and ſome are finely variegated with Red, White, and Purple. There are many intermediate Shades of theſe Colours; the Flowers are large and very double, and when properly managed are extremely beautiful. I ſhall therefore proceed to give ample Directions for their Culture, which, if duly obſerved, the Flowers may be had in Perfection.

Take freſh untried Earth (from a Common or Paſture Land) of a light ſandy Loam, or hazel Mould, obſerving not to take it above ten Inches deep below the Surface; if the Turf be taken with it the better, provided it hath Time to rot thoroughly before it is uſed: Mix this with a third Part of rotten Cow Dung, and lay it in a Heap, keeping it turned over at leaſt once a Month for eight or ten Months, the better to mix it, and rot the Dung and Turf, and to let it have the Advantages of the free Air: In doing this Work, be careful to rake out all great Stones, and break the Clods (but by no Means ſift or ſcreen the Earth, which I have found very hurtful to many Sorts of Roots); for when the Earth is made very fine, upon the firſt great Rains of Winter or Spring, the ſmall Particles join cloſely together, and form one ſolid Maſs, ſo that the Roots often periſh for Want of ſome ſmall Stones to keep the Particles aſunder, and make Way for the tender Fibres to draw Nouriſhment for the Support of the Root.

This Earth ſhould be mixed twelve Months before it is uſed, if poſſible; but if you are conſtrained to uſe it ſooner, you muſt turn it over the oftener, to mellow and break the Clods; and obſerve to rake out all the Parts of the green Sward, that are not quite rotten, before you uſe it, which would be prejudicial to your Roots, if ſuffered to remain. The Beginning of *September* is a proper Seaſon to prepare the Beds for Planting (which if in a wet Soil, ſhould be raiſed with this

Sort of Earth ſix or eight Inches above the Surface of the Ground, laying at the Bottom ſome of the Rakings of your Heap to drain off the Moiſture; but in a dry Soil, three Inches above the Surface will be ſufficient): This Compoſt ſhould be laid at leaſt two Feet and a Half thick, and in the Bottom there ſhould be about four or five Inches of rotten Neats Dung, or the rotten Dung of an old Melon or Cucumber Bed, ſo that you muſt take out the former Soil of the Beds to make Room for it.

And obſerve in preparing your Beds, to lay them (if in a wet Soil) a little round, to ſhoot off the Water; but in a dry one, let it be nearer to a Level; in wet Land where the Beds are raiſed above the Surface, it will be proper to fill up the Paths between them in Winter, either with rotten Tan or Dung, to prevent the Froſt from penetrating into the Sides of the Beds, which often deſtroy their Roots. The Earth ſhould be laid in the Beds a Fortnight or three Weeks before you plant the Roots, that it may ſettle, and when you plant them, ſtir the upper Part of the Soil about ſix Inches deep, with a Spade; then rake it even and ſmooth, and with a Stick draw Lines each Way of your Bed at ſix Inches Diſtance, ſo that the Whole may be in Squares, that your Roots may be planted regularly: Then with your three Fingers make a Hole in the Center of each Square, about three Inches deep, laying therein a Root with the Eye uppermoſt; and when you have finiſhed your Bed, with the Head of a Rake draw the Earth ſmooth, ſo as to cover the Crown of the Roots about two Inches thick.

The beſt Seaſon for planting theſe Roots, if for forward Flowers, is about the latter End of *September*; and for thoſe of a middle Seaſon, any Time in *October*; but obſerve to perform this Work, if poſſible, at or near the Time of gentle Showers; for if you ſhould plant them when the Ground is perfectly dry, and no Rain fall for three Weeks or a Month after, the Roots will be very apt to grow mouldy upon the Crown; and if they once get this Diſtemper, they ſeldom come to good after.

You may alſo reſerve ſome of your *Anemone* Roots till after *Chriſtmas*, before you plant them, leſt by the Severity of the Winter your early planted Roots ſhould be deſtroyed, which does ſometimes happen in very hard Winters, eſpecially in thoſe Places where they are not covered to protect them from Froſt: Theſe late planted Roots will flower a Fortnight or three Weeks after thoſe which were planted in Autumn, and many Times blow equally as fair, eſpecially if it prove a moiſt Spring, and Care be taken to refreſh them with Water.

But then the Increaſe of theſe Roots will not be near ſo great as thoſe of your firſt Planting, provided they were not hurt in Winter; and it is for this Reaſon all thoſe who make Sale of theſe Roots, are forward in planting; for although it may happen, by ſharp pinching Froſts in Spring, that their Flowers are not ſo double and fair as thoſe planted a little later, yet if they can preſerve the green Leaves of the Plants from being injured, the Roots will greatly increaſe in Bulk; but in ſuch Gardens where theſe Flowers are preſerved with Care, there is always Proviſion made to cover them from the Injuries of the Weather, by arching the Beds over with Hoops, or Frames of Wood, and covering them with Garden Mats or Cloths, in froſty Nights, and bad Weather, eſpecially in Spring when their Buds begin to appear; for otherwiſe, if you plant the beſt and moſt double Flowers, the black Froſts and cutting Winds in *March* will cauſe them to blow ſingle, by deſtroying the Thrum that is in the Middle of the Flower; and this hath occaſioned many People who have bought the Roots, to think they were cheated in the Purchaſe of them, when it was wholly owing to their Neglect of covering them, that their Flowers were ſingle.

In the Beginning of *April* your firſt planted Roots will begin to flower, which will continue for three Weeks or more, according to the Heat of the Weather, or the Care taken of covering them, during the Heat of the Day, with Mats or Cloths: After theſe are paſt flowering, the ſecond planted Sorts will come to ſucceed them, and theſe will be followed by thoſe planted in the Spring; ſo that you may have theſe Beauties continued for near two Months together, or ſometimes longer, if the Seaſon proves favourable, or proper Care is taken to ſhade them in the Heat of the Day.

Toward the latter End of *May* or the Beginning of *June*, the Leaves of your firſt blown Roots will begin to decay; ſoon after which Time you muſt take them out of the Ground, clearing them from decayed Stalks, and waſhing them, to take the Earth clean from the Roots; then ſpread them on a Mat in a dry ſhady Place till they are perfectly dried, when you may put them up in Bags, and hang them out of the Reach of Mice, or other Vermin, which will deſtroy them.

Obſerve alſo to take up the latter planted Roots as ſoon as their Leaves decay; for if they are ſuffered to remain long after in the Ground, and there ſhould fall ſome Showers of Rain they would ſoon put forth freſh Fibres, and make new Shoots, when it would be too late to remove them: At the Time when you take up the Roots, is the proper Seaſon for breaking or parting them, which may be done by ſeparating thoſe that you would chooſe to make all poſſible Increaſe from, into as many Parts as you can conveniently, provided each one of them have a good Eye or Bud; but thoſe you intend to blow ſtrong, ſhould by no Means be parted too ſmall, which greatly weakens their Flowering.

The principal Colours in *Anemonies* are, white, Red, Blue, and Purple; and theſe in ſome of them, are curiouſly intermixed; but the moſt prevailing Colours amongſt our *Engliſh* raiſed *Anemonies*, are white and Red; though of late we have received from *France* great Varieties of Blues and Purples, which are very beautiful, and being intermixed with the *Engliſh* Flowers, make a fine Variety: We ſhould therefore obſerve, in planting the Roots, to diſtribute the different Colours, ſo as to make an agreeable Mixture of each in every Bed, which will greatly add to their Beauty.

But ſince all the fine Varieties of theſe Flowers were firſt obtained from Seeds, no good Floriſt, that hath Garden Room, ſhould neglect to ſow them; in order to which, we ſhould provide ourſelves with a Quantity of good ſingle (or what the Gardeners call Poppy *Anemonies*) of the beſt Colours, and ſuch as have ſtrong Stems and large Flowers, but eſpecially ſuch as have more Leaves than common, and other good Properties; theſe ſhould be planted early, that they may have Strength to produce good Seeds, which will be ripe in three Weeks or a Month's Time, after the Flowers are paſt;

when you muſt carefully gather it, or it will be blown away in a ſhort Time, being incloſed in a downy Subſtance. You muſt preſerve this Seed till the Beginning of *Auguſt*, when you may either ſow it in Pots, Tubs, or a well prepared Bed of light Earth: In doing it you muſt be careful not to let your Seeds be in Heaps, to avoid which is little underſtood, and is what I have been informed of by the late Mr. *Obadiah Lowe*, Gardener at *Batterſea*, who for ſeveral Years raiſed large Quantities of theſe Flowers from Seeds: His Manner was thus:

After having levelled the Earth, in which he intended to ſow his Seeds, he rubbed them well between his Hands, with a little dry Sand, in order to make them ſeparate the better; then he ſowed them as regularly as poſſible over the Bed; but as theſe Seeds will ſtill adhere cloſely together by their Down, he took a ſtrong hair Bruſh, with which he gently ſwept over the whole Bed, obſerving not to bruſh off the Seeds; this Bruſh will ſo ſeparate the Seeds, if carefully managed, as not to leave any entire Lumps; then gently ſift ſome light Earth, about a Quarter of an Inch thick over the Seeds; and, if it ſhould prove hot dry Weather, it will be adviſeable to lay ſome Mats hollow upon the Bed in the Heat of the Day, and now and then give them a little Water, but this muſt be given gently, leſt by haſtily watering you waſh the Seeds out of the Ground; be ſure to uncover the Bed at all Times during gentle Showers, and every Night, that the Seeds may have the Benefit of the Dews; as the Heat of the Weather decreaſes, you may uncover your Bed in the Day Time.

In about two Months after ſowing, your Plants will begin to appear, if the Seaſon has proved favourable, or your Care in Management hath not been wanting, otherwiſe they many Times remain a whole Year in the Ground. The firſt Winter after their appearing above Ground, they are ſubject to Injuries from hard Froſts, or too much Wet, againſt both of which you muſt equally defend them; for the Froſt is very apt to looſen the Earth, ſo that the young Plants are often turned out of the Ground, after which a ſmall Froſt will deſtroy them; and too much Wet, often rots their tender Roots, ſo that all your former Trouble may be loſt in a ſhort Time for want of Care in this Particular; nor do I know of any Thing more deſtructive to theſe tender Plants, than the cold black Froſts and Winds of *February* and *March*, from which you muſt be careful to defend them, by placing a low Reed Fence on the North and Eaſt Sides of the Bed, which may be moveable, and only faſtened to a few Stakes to ſupport it for the preſent, and may be taken quite away as the Seaſon advances, or removed to the South and Weſt Sides of the Bed, to ſcreen it from the Violence of the Sun, which often impairs theſe Plants when young.

As the Spring advances, if the Weather proves dry, you muſt gently refreſh them with Water, which will greatly ſtrengthen your Roots; and when the green Leaves are decayed, if your Roots are not too thick to remain in the ſame Bed another Year, you muſt clear off all the Weeds, and decayed Leaves, from the Bed, and ſift a little more of the ſame prepared good Earth, about a Quarter of an Inch thick over the Surface; obſerve to keep them clear from Weeds during the Summer Seaſon, and at *Michaelmas* repeat the ſame Earthing; but as theſe Roots ſo left in the Ground, will come up early in Autumn, the Beds ſhould be carefully covered in froſty Weather, or their Leaves will be injured, whereby the Roots will be weakened, if not deſtroyed. If your Roots ſucceed well, many of them will flower the ſecond Year, when you may ſelect ſuch as you like, by marking them with a Stick; but you ſhould not deſtroy any of them until after the third Year, when you have ſeen them blow ſtrong, at which Time you may judge of their Goodneſs; for until the Roots have acquired Strength, the Flowers will not ſhew to Advantage.

By this Time your Roots will be too thick in the Seed Bed to remain, therefore you muſt, as ſoon as their green Leaves are decayed, ſift the Earth of your Bed through a very fine Sieve, in order to get out the Roots, which can be no otherways found, being ſmall, and ſo nearly the Colour of the Ground; but in doing this, obſerve not to diſturb the Ground too deep, ſo as to endanger the burying any of the Roots; for, notwithſtanding all your Care, many ſmall Roots will be left behind; therefore, as ſoon as you have ſifted your whole Bed, and taken out all the Roots you can find, level the Earth of your Bed again, and let it remain till next Year, when you will find a plentiful Crop of Roots come up again; the young Roots which you take up muſt be dried, as was directed for the old ones, but ſhould be planted again three Weeks before them, that they may increaſe in Strength, ſo as to flower ſtrongly the next Year.

The ſingle (or Poppy) Anemonies will flower moſt Part of the Winter and Spring, when the Seaſons are favourable, if they are planted in a warm Situation, at which Time they make a fine Appearance, therefore deſerve a Place in every Flower Garden, eſpecially as they require little Culture; for if theſe Roots are taken up every third Year, it will be often enough, and when they are taken up, they ſhould be planted again very early in the Autumn, otherwiſe they will not flower till the Spring. There are ſome fine blue Colours amongſt theſe ſingle Anemonies, which, with the Scarlets, and Reds, make a beautiful Mixture of Colours; and as theſe begin flowering in *January* or *February*, when the Weather is cold, they will continue a long Time in Beauty, provided the Froſt is not too ſevere. The Seeds of theſe are ripe by the Middle or End of *May*, and muſt be gathered daily as it ripens, otherwiſe it will ſoon be blown away by the Winds.

The Anemone grows naturally in the *Levant*, particularly in the Iſlands of the *Archipelago*, where the Borders of their Fields are covered with them of all the Colours, but the Flowers are ſingle, and have been greatly improved by Culture. In *France* they were long cultivated before they were much known in *Holland*, or *England*. *Tournefort* mentions two *French* Gentlemen, Meſſrs. *Malaval* and *Bachelier*, who contributed greatly to the Improvement of theſe Flowers; and of the latter he relates a pleaſant Story, as follows: There was a certain Lawyer to whom Mr. *Bachelier* had refuſed to communicate the Seeds of his fine Anemonies, and finding he could not obtain any either by Friendſhip or Money, a Fancy came into his Head, to make a Viſit to Mr. *Bachelier* with ſome of his Friends who were in the Secret; he ordered his Lacquey who ſupported the Train of his Gown, to let it drop on a Bed where the

Anemonies grew which he wanted, whoſe Seeds were then ripe. They walked a conſiderable Time talking on various Subjects, and when they came to the Spot where the Anemonies grew, a merry Gentleman of the Company began a Story to engage the Attention of Mr. *Bachelier*, at which Time the Lacquey, who was no Fool, let fall his Maſter's Train over the Bed, and the Seeds having a downy Covering, ſtuck to the Gown, which the Boy afterwards took up, and the Company went forward. The Virtuoſo took Leave of Mr. *Bachelier*, and went directly Home, where he carefully picked off the Seeds which had ſtuck to his Robes, and ſowed them, which produced very beautiful Flowers.

ANEMONOIDES. *See* Anemone.

ANEMONOSPERMOS. *See* Arctotis.

ANETHUM, Dill.

The *Characters* are,

It is an umbelliferous Plant, having many Umbels, which have no Involucrums. The Umbels are uniform, and are compoſed of many ſmaller ones. The Flowers have five Spear-ſhaped Petals, each of theſe have five ſlender Stamina, crowned with blunt Summits; under the Flower is ſituated the Germen ſupporting two ſmall Styles crowned with blunt Stigma, the Germen afterward becomes two compreſſed Seeds having Borders.

We have but one *Species* of this Genus, *viz.*

ANETHUM *fructibus compreſſis. Hort. Cliff.* 106. Dill with compreſſed Seeds. Garden or common Dill.

This Plant is propagated by ſowing the Seeds, which ſhould be done in Autumn, ſoon after they are ripe; for if they are kept out of the Ground till Spring, they frequently miſcarry; or if any of the Plants do come up, they often decay before they have perfected their Seeds. They love a light Soil, and will not bear to be tranſplanted, but muſt be ſown where they are to remain; and muſt be allowed eight or ten Inches room to grow, otherwiſe they will draw up very weak, and not produce any lateral Branches, whereby their Leaves will decay, and be rendered uſeleſs, nor will they produce ſo good Seeds; therefore the beſt Way is, when the Plants are come up, to hoe them out, as is practiſed for Onions, Carrots, *&c.* leaving the Plants about eight or ten Inches aſunder every Way, obſerving to keep them clear from Weeds; and when the Seeds begin to be formed, you ſhould cut up thoſe that are intended to be put into the Pickle for Cucumbers, leaving thoſe that are intended for the Uſe of the Seeds, until they are ripe; at which Time it ſhould be cut, and ſpread upon a Cloth to dry, and then beat out for Uſe; if you let the Seeds fall upon the Ground, they will riſe the next Spring without any Care.

ANGELICA.

The *Characters* are,

It is an umbelliferous Plant, the greater Umbel being compoſed of many ſmall ones, the Involucrum, or Cover, of the large Umbel is compoſed of five ſmall Leaves, and thoſe of the ſmaller of eight, and the Empalement of the Flowers are indented in five Parts. The Flowers of the whole Umbel are uniform, each of them conſiſt of five Petals which fall away, theſe have five Stamina, which are longer than the Petals, and are crowned with ſingle Summits. The Germen is ſituated below the Flower, ſupporting two reflexed Styles, crowned with obtuſe Stigma, the Germen afterward becomes a roundiſh Fruit ſplitting into two, and compoſed of two Seeds, which are plain on one Side and convex on the other, and are bordered.

The *Species* are,

1. ANGELICA *foliorum impari lobato. Flor. Lapp.* 101. Angelica with Leaves compoſed of an unequal Number of Lobes. Common Garden Angelica.

2. ANGELICA *altiſſima foliorum lobatis maximis ſerratis.* Talleſt Angelica with Leaves compoſed of large ſerrated Lobes.

3. ANGELICA *Sylveſtris major.* Greater wild Angelica.

4. ANGELICA *Canadenſis atro purpurea. Cornut. Canad.* 198. Dark Purple Angelica of *Canada.*

5. ANGELICA *lucida Canadenſis.* Shining Angelica of *Canada.*

The 1ſt Sort is the common Angelica, which is cultivated in the Gardens for medicinal Uſe, as alſo for making a ſweet Meat, which is by ſome greatly eſteemed. This grows naturally by the Side of Rivers in *Lapland*, and other northern Countries.

The 2d Sort grows naturally in *Hungary*, and ſome Parts of *Germany*. This has been ſuppoſed to be only a Variety of the 1ſt by many modern Botaniſts; but from many Years Experience in the Culture of this Plant, I could never obſerve any Alteration in it; for all the Plants which I raiſed from Seeds proved exactly the ſame as the Parent Plant, and when planted in the ſame Soil with the common Sort, they were twice their Size. The Leaves were alſo much larger, and deeper ſawed on their Edges, the Umbels much larger, and the Flowers were yellow. This Sort ſeldom continues longer than three or four Years, ſo that young Plants ſhould be raiſed to preſerve the Species. The Seeds ſhould be ſown in Autumn, for thoſe which are ſown in the Spring ſeldom ſucceed.

The 3d Sort grows naturally in moiſt Meadows, and by the Sides of Rivers in many Parts of *England*, ſo is ſeldom admitted into Gardens.

The 4th and 5th Sorts grow naturally in *North America*, from whence their Seeds were ſent to *Europe*, where the Plants are preſerved in Gardens for the Sake of Variety; but as they have no Uſe, and but little Beauty, they are not admitted into many Gardens. They are both very hardy Plants, and may be eaſily propagated by Seeds, which ſhould be ſown in Autumn, and when the Plants are large enough to remove, they muſt be tranſplanted into a moiſt Soil, and have a ſhady Situation, allowing them two Feet room on every Side. They grow near four Feet high, and put out many Shoots from the Root, eſpecially the ſecond Year from Seed, when they will flower in *June*, and the Seeds ripen in *September*. The Roots of theſe Sorts ſeldom continue longer than three or four Years.

The common *Angelica* delights to grow in a very moiſt Soil, the Seeds ſhould be ſown ſoon after they are ripe; for if they are kept until the Spring, ſeldom one Seed in Forty will grow. When the Plants are about ſix Inches high, they ſhould be tranſplanted at a large Diſtance; for their Leaves extend very wide; the beſt Place for this Plant is upon the Sides of Ditches, or Pools of Water, where being planted about three Feet aſunder, they will thrive exceedingly. The ſecond Year after ſowing, they will ſhoot up to flower; therefore if you have a Mind to continue their Roots, you ſhould cut down theſe Stems in *May*, which will occaſion their putting out Heads from the Sides of the Roots, whereby they may be continued for three or four Years; whereas if they had been permitted to ſeed, their Roots would periſh ſoon after.

The Gardeners near *London*, who have Ditches of Water running through their Gardens, do propagate great Quantities of this Plant, for which they have a great Demand from the Confectioners, who make a Sweet-meat with the tender Stalks of it, cut in *May*.

This Plant is alſo uſed in Medicine, as are alſo the Seeds; therefore where it is cultivated for the Seeds there ſhould be new Plantations annually made to ſupply the Places of thoſe which die, for when they are permitted to ſeed, they laſt but two Years.

ANGUINA. *See* Tricoſanthes.

ANGURIA, the Water Melon, or Citrul.

The *Characters* are,

It hath male and female Flowers growing ſeparate on the ſame Plant, the Flowers of both Sexes, are of the open Bell-ſhaped Kind, of one Leaf, and have Empalements of the ſame Form. The male Flowers have three ſhort Stamina, which are joined together, theſe are crowned by ſlender Summits. The female Flowers reſt upon an oval Germen, ſupporting a cylindrical Style, crowned by three large Stigma, which are gibbous; the Germen afterwards becomes an oblong fleſhy Fruit, having five Cells filled with compreſſed Seeds, which are rounded at their Extremity.

We have but one *Species* of this Genus, *viz.*

ANGURIA *foliis multipartitis.* Water Melon with Leaves cut into many Parts. This is the *Anguria Citrullus dicta. C. B. P.* 312. *i. e.* Water Melon called Citrul. Of this there are ſeveral Varieties, which differ in the Form and Colour of their Fruit. But as theſe vary annually from Seeds, ſo it is needleſs to enumerate them.

This Fruit is cultivated in *Spain*, *Portugal*, *Italy*, and moſt other warm Countries in *Europe*; alſo in *Africa*, *Aſia*, and *America*; and is by the Inhabitants of thoſe Countries greatly eſteemed for their wholeſome cooling Quality; in *England* the Fruit is not ſo univerſally eſteemed, though ſome few Perſons are very fond of them. I ſhall therefore give full Directions for raiſing them, ſo that ſuch Perſons as are willing to be at the Expence and Trouble, may not be at a loſs for Inſtructions.

You muſt firſt provide yourſelf with ſome Seeds, which ſhould be three or four Years old; for new Seeds are apt to produce vigorous Plants, which are ſeldom ſo fruitful as thoſe of a moderate Strength. The beſt Sorts to cultivate in *England*, are thoſe with ſmall round Fruit, which come from *Aſtracan*, thoſe with very large Fruit, ſeldom ripen in this Climate. Having provided yourſelf with good Seed, prepare a Quantity of new Dung the Beginning of *February*, which ſhould be thrown in a Heap for about twelve Days to heat; then you ſhould make a hot Bed for one ſingle Light, for which one good Load of Dung will be ſufficient; this Dung ſhould be well wrought in making the Bed, and muſt be beaten down pretty cloſe with a Dung Fork, that the Heat may not be too violent, and of longer Continuance. When the Dung is thus laid, cover it about four Inches thick with good light Earth, and having ſpread it very even, put the Frame and Glaſs over it, leaving it to warm four or five Days before you ſow the Seeds, obſerving, if the Steam riſes pretty much, to raiſe up the Glaſs with a Stone, to let it paſs off. Then, if you find the Bed in proper Temper, you may ſow the Seeds therein in Drills, covering them over with Earth, about Half an Inch. After this, if you find the Bed very warm, you muſt give Air in the Day Time by raiſing the Glaſſes; but if the Bed is cool, you muſt cover it well with Mats every Night, as alſo in bad Weather. In four or five Days after, you muſt prepare another hot Bed to receive theſe Plants, which will be fit to tranſplant in ten Days, or a Fortnight at moſt, after the Seeds are ſown; this Bed need not be very large, for a few of theſe Plants will fill a large Quantity of Frames, when they are planted out for good; and while the Plants are young, there may be a great Quantity kept in one Light; ſo that thoſe Perſons who raiſe early Cucumbers and Muſk Melons, may alſo raiſe theſe Plants in the ſame Bed; for two or three Lights will be ſufficient to raiſe Plants of all three Kinds, to ſupply the largeſt Families, until they are planted out for good. In the Management of theſe Plants while young, there is little Difference from the Directions given for raiſing Muſk Melons, therefore I need not repeat it here. The chief Thing to be obſerved, is, to let them have a large Share of Air whenever the Weather will permit, otherwiſe the Plants will draw up weak, and be good for little. As theſe Plants will require two or three hot Beds to bring the Fruit to Perfection, it will be the better Way to put the Plants into Baſkets, when they have got four Leaves, as is directed for raiſing early Cucumbers; but you ſhould not Plant more than two Plants in each Baſket; for if one of them lives, it will be ſufficient; therefore when both the Plants ſucceed, you ſhould draw out the weakeſt and moſt unpromiſing of them, before they begin to put out their Side Shoots, otherwiſe they will entangle, and render it difficult to be performed, without greatly injuring the remaining Plant.

The Baſkets in which theſe are to be planted, need not be more than a Foot Diameter, ſo that one Light will contain Eight of them which will be ſufficient for twenty-four Lights, when they are planted out for good; for where the Plants are vigorous, one Plant will ſpread ſo far as to fill three Lights; and if they have not Room, they ſeldom ſet their Fruit well.

Theſe Baſkets may remain in the Nurſery Beds, until the Plants have ſpread, and put out many Runners; for when the Heat of this Bed declines, it is ſoon revived by adding a proper Lining of warm Dung to the Sides of the Bed quite round; ſo that when they are taken out of this Bed, and placed in the Ridges where they are to remain, the Heat of the Beds will laſt ſo long as to ſet their Fruit, which is of great Conſequence; for when the Plants are ridged out very young, the Beds are generally made of a great Thickneſs in Dung, in order to continue their Heat; ſo that for ſome Time after they are made, they are ſo extreme hot, as to endanger the ſcalding of the Plants; and by the Time the Fruit begins to appear, there is little Heat left in the Beds, which often occaſions the Fruit to drop off, and come to nothing.

After theſe Plants are placed in the Beds where they are to remain, you muſt carefully lead the Shoots as they are produced, ſo as to fill each Part of the Frame, but not to croud each other; and be careful to keep them clear from Weeds, as alſo to admit freſh Air whenever the Weather will permit; they muſt alſo be frequently watered, but do not give it them in great Quantities. In ſhort, there is little Difference to be obſerved in the Management of theſe, from that of Muſk Melons, but only to give them more Room, and to keep the Beds to a good Temparature of Heat, and when the Fruit appears, to admit Air freely to the Plants, in order to ſet their Fruit, but when the Nights are cold, the Glaſſes muſt be covered with Mats to keep the Beds warm, without which this Fruit will ſeldom come to good in this Country.

ANIL. The Indigo Plant.

The *Characters* are,

It hath a ſpreading Empalement of one Leaf, which is indented in five Parts at the Top. The Flower is of the Butterfly Kind. The Standard is open, bordered, and reflexed. The Wings are oblong, blunt, and ſpread open, as is alſo the Keel, which turns backwards. There are ten Stamina in the Flower, nine of which are joined, and the other ſtands ſeparate, theſe are crowned by roundiſh Summits. In the Center is ſituated a cylindrical Germen, ſupporting a ſhort Style, crowned with an obtuſe Stigma. The Germen afterwards becomes a taper Pod, filled with Kidney-ſhaped Seeds.

The *Species* are,

1. ANIL *leguminibus arcuatis incanis racemis folio brevioribus caule fruticoſo perenni.* Indigo with hoary crooked Pods, Spikes of Flowers ſhorter than the Leaves, and a ſhrubby perennial Stalk. *Jamaica* wild Indigo.

2. ANIL *leguminibus ſeſſilibus arcuatis glabris foliis impari pinnatis foliolis ovatis obtuſis.* Indigo with ſmooth arched Pods growing cloſe to the Branches, unequal winged Leaves whoſe Lobes are blunt and oval. The *Guatimala* Indigo.

3. ANIL *leguminibus teretibus brevibus foliis pinnatis quiniſve, ſpicis florum longiſſimis laxis, radice perenne.* Indigo with ſhort round Pods, winged Leaves having five Lobes, very long looſe Spikes of Flowers, and a perennial Root. This is the *Carolina* wild Indigo.

4. ANIL *leguminibus pendulis lanatis compreſſis foliis pinnatis.* Indigo with woolly hanging compreſſed Pods and winged Leaves.

5. ANIL *leguminibus horizontalibus teretibus foliis pinnatis ternatiſque.* Indigo with round horizontal Pods and winged Leaves, having three Lobes.

The 2d, 4th, and 5th Sorts are annual Plants with us; the Seeds of theſe muſt be ſown on a hot Bed early in the Spring of the Year; and when the Plants are two Inches high, they ſhould be tranſplanted into ſmall Pots filled with good freſh Earth, and the Pots plunged into a hot Bed of Tanners Bark; when the Plants have obtained ſome Strength, they muſt have a great Share of free Air, by raiſing the Glaſſes in the Day Time; and in *June* they may be expoſed more to the open Air, by which Time they will begin to produce their Flowers, which will be ſucceeded by Pods in a ſhort Time after, and in *Auguſt* their Seeds will be perfected, if the Plants are brought forward in the Spring.

The 3d Sort grows to the Height of five or ſix Feet, and will abide two or three Years, if preſerved in a very warm Stove in Winter; this produces Spikes of Flowers from the Wings of the Leaves on the Sides of the Stems, and ſometimes perfects its Seeds in *England.* This muſt be raiſed in a hot Bed, as was directed for the three former, but muſt not be wholly expoſed to the open Air, even in the hotteſt Weather.

The 2d and 4th Sorts are ſuppoſed to be promiſcuouſly uſed to make the Indigo, but the ſecond is the common Sort which is cultivated in the *Engliſh* Plantations in *America*; but I have been aſſured by a Perſon of great Credit, that he has made as good Indigo from the firſt Sort, as any that was produced in our Plantations; and this being a much larger Plant, will afford a greater Quantity from the ſame Compaſs of Ground, than any one of the other Species; this Sort will grow on poorer Land, ſo may be cultivated in ſuch Places where the 1ſt Sort will not thrive; by which Means great Improvements may be made with this Plant in our *American* Plantations. The *French* chiefly cultivate the 2d Sort, which is generally called *Guatamala* Indigo; but there are ſome other Sorts of this Plant, which are Natives of *India,* from which this Commodity is made; two of which, *viz.* the 4th and 5th Sorts I have had growing in the Garden at *Chelſea,* both which are very different in their Leaves and Pods from either of the *American* Sorts. I have alſo received Seeds from *India* of the 3d Sort which is the ſame Species of Indigo which grows naturally in *South Carolina,* and which was greatly eſteemed ſome Years ago by the Indigo Planters of that Country, for the Beauty of the Commodity which it produced; but the Plants being ſlender and thinly garniſhed with Leaves, which were ſmall, they did not furniſh a Quantity of Indigo, in Proportion to their Bulk, ſo of late this Sort has not been much cultivated there; though the Account which I received with the Seeds was, that it was what the beſt Indigo of *India* was made from.

ANISUM, or ANISE. *See* Pimpinella.

ANNONA. *L. G. P. Guanabanus. Plum. Nov. Gen.* 10. The Cuſtard-Apple.

The *Characters* are,

The Empalement is compoſed of three ſmall Heart-ſhaped Leaves, which are concave and pointed. The Flower hath ſix Petals, which are three large and three alternately ſmaller. The Stamina is ſcarce diſcernible, but there are many Summits, on each Side the Germen, which is ſituated at the Bottom of the Flower, having no Style, but an obtuſe Stigma. The Germen afterward becomes an oval, or oblong Fruit, having a ſcaly Rind, and one Cell, in which are lodged many oval ſmooth Seeds.

The *Species* are,

1. ANNONA *foliis lanceolatis fructibus ovatis reticulato-areolatis. Lin. Sp. Plant.* 537. *Annona* with Spear-ſhaped Leaves, and oval Fruit which are netted, or wrought in Squares. The Cuſtard Apple.

2. ANNONA *foliis ovali-lanceolatis glabris nitidis planis pomis muricatis. Hort. Cliff.* 222. *Annona* with plain ſmooth, ſhining, oval, Spear-ſhaped Leaves, and a prickly Fruit. The Sour Sop.

3. ANNONA *foliis oblongis fructibus obtusè ſubſquamatis. Lin. Sp. Plant.* 537. *Annona* with oblong Leaves, and obtuſe ſcaly Fruit. The Sweet Sop.

4. ANNONA *foliis oblongis obtuſis glabris, fructu rotundo, cortice glabro. Annona* with oblong blunt ſmooth

Leaves, and round Fruit, with a ſmooth Skin. The Water Apple.

5. Annona *foliis latiſſimis glabris, fructu oblongo ſquamato, ſeminibus nitidiſſimis.* *Annona* with very broad ſmooth Leaves, oblong ſcaly Fruit, and very ſhining Seeds. This is called *Cherimolias* by the *Spaniards.*

6. Annona *foliis ovato-lanceolatis pubeſcentibus fructu glabro ſubcæruleo. Annona* with oval Spear-ſhaped downy Leaves, and ſmooth bluiſh Fruit. The Sweet Apple.

7. Annona *foliis lanceolatis glabris nitidis ſecundum nervos ſulcatis. H. C. Annona* with neat Spear-ſhaped Leaves, with nervous Furrows. The Purple Apple.

8. Annona *foliis lanceolatis fructibus trifidis. Lin. Sp. Plant.* 537. *Annona* with Spear-ſhaped Leaves, and trifid Fruit. *North American Annona*, or *Papaw.*

The 1ſt Sort grows to the Height of twenty-five Feet, or upwards, in the *Weſt-Indies*, and is well furniſhed with Branches on every Side; the Bark is ſmooth, and of an Aſh Colour; the Leaves oblong, pointed, and have ſeveral deep tranſverſe Ribs or Veins, and are of a light green Colour; the Fruit is of a conical Form, as large as a Tennis Ball, orange Colour when ripe, having a ſoft ſweet yellowiſh Pulp, of the Conſiſtence of a Cuſtard, from whence this Name was given to it.

The 2d Sort is not ſo large as the 1ſt, rarely riſing above twenty Feet high, and not ſo well furniſhed with Branches; the Leaves are broader, and have a ſmooth Surface without any Furrows, and are of a ſhining green Colour; the Fruit is large, of an oval Shape, irregular, and pointed at the Top, of a greeniſh yellow Colour, and full of ſmall Knobs on the Outſide; the Pulp is ſoft, white, and of a ſour and ſweet Taſte intermixed, having many oblong dark-coloured Seeds.

The 3d Sort is a Tree of humbler Growth, ſeldom riſing more than twenty Feet high, and is well furniſhed with Branches on every Side: the Leaves of this Sort have an agreeable Scent when rubbed; the Fruit is roundiſh and ſcaly, and when ripe turns of a purple Colour, and hath a ſweet Pulp.

The 4th Sort commonly grows from thirty to forty Feet in the *Weſt-Indies.* This hath oblong pointed Leaves, which have ſome ſlender Furrows, and when rubbed have a ſtrong Scent; the Fruit of this Sort is ſeldom eaten but by the Negroes; the Tree grows in moiſt Places in all the Iſlands of the *Weſt-Indies.*

The 5th Sort is much cultivated in *Peru*, for the Fruit; and from thence the Seeds have been brought to *England*, and many Plants have been raiſed. This grows to a very large Tree in its native Country, and is well furniſhed with Branches, which are garniſhed with Leaves of a bright green Colour, and much larger than thoſe of any of the other Sorts. The Fruit is oblong, and ſcaly on the Outſide, and of a dark purple Colour when ripe; the Fleſh is ſoft and ſweet, has many brown Seeds intermixed, which are very ſmooth and ſhining; the Fruit is eſteemed by the *Peruvians* as one of their moſt delicate Sorts. This has produced Flowers in *England*, but no Fruit.

The 6th and 7th Sorts grow in ſome of the *French* Iſlands, alſo in *Cuba*, in great Plenty; and to the Height of thirty Feet or more; their Fruit are eſteemed by the Inhabitants of thoſe Iſlands, who give them to ſick Perſons, reckoning them very cooling and wholeſome.

The 8th Sort grows plentifully in the *Bahama* Iſlands, where it ſeldom riſes to more than ten Feet high, having ſeveral Stems; the Fruit is ſhaped like a Pear inverted. This is ſeldom eaten but by the Negroes, and is the Food of *Guanas*, and other Animals.

This Sort will thrive in the open Air in *England*, if planted in a warm ſheltered Situation; but the Plants ſhould be trained up in Pots, and ſheltered in Winter, for two or three Years, until they have acquired ſome Strength; then they may be turned out of the Pots in the Spring, and planted in the full Ground, where they are to remain. This Sort has produced Flowers in the curious Garden of his Grace the Duke of *Argyle*, at *Whitton*, near *Hounſlow*, where it has been growing in the open Air for ſome Years, as alſo in the Nurſery of Mr. *Gray*, near *Fulham.* The Seeds are frequently brought to *England* from *North America*; and many Plants have been lately raiſed in the Gardens near *London.* The Seeds of this Sort are very different in Shape, from any of thoſe I have yet ſeen brought from the Iſlands of the *Weſt-Indies*, and the Shape of the Leaves is alſo different; this caſts its Leaves in Autumn, whereas all the others retain their Leaves, never caſting them until the Spring, when the new Leaves come out. The Fruit is very different from thoſe of the other Species, two or three growing, joined together at their Foot Stalks. The Seeds of this Sort frequently remain a whole Year in the Ground; therefore the Earth ſhould not be diſturbed, where they are ſown, if the Plants do not come up the firſt Year; but the beſt Way is, to ſow the Seeds in Pots, which may be ſheltered in Winter; and if they are plunged into a moderate hot Bed in the Spring, the Plants will come up much ſooner than in the open Air; ſo will have more Time to get Strength before Winter.

All the Sorts, which are Natives of the warm Parts of *America*, are too tender to live in this Country, if not preſerved in warm Stoves; they come up very eaſily from the Seeds which are brought from *America*, if they are freſh; but the Seeds muſt be ſown on a good hot Bed, or in Pots of light Earth, and plunged into a hot Bed of Tanners Bark. Theſe Seeds ſhould be ſown as ſoon as poſſible when they arrive, unleſs it is very late in the Autumn, or in Winter; in which Caſe they ſhould not be ſown till *February*, becauſe if the Seeds receive much Damp in Winter, they will rot; and if the Plants ſhould come up at that Seaſon, it will be very difficult to preſerve them till the Spring; ſo that when theſe Seeds come to *England*, pretty early in the Spring, it is by much the beſt Time; becauſe the Plants come up early, and will have Time to get Strength, before the cold Weather comes on in Autumn.

If theſe Plants are kept in the Bark Stove, and carefully managed, they will make great Progreſs; but in warm Weather they ſhould have Plenty of freſh Air admitted to them; for when the Air is excluded too much, they are apt to grow ſickly, and are ſoon attacked by Vermin, which will multiply and ſpread over the whole Surface of the Leaves, and cauſe them to decay; but if the Plants are carefully managed, their Leaves will continue green all the Winter, and make a very good Appearance in the Stove at that Seaſon.

As theſe Plants advance in their Growth, ſo they ſhould be ſhifted into larger Pots, but this muſt be done with Caution; for nothing is more prejudicial than over potting them. They muſt conſtantly remain in the Tan Bed, otherwiſe they will make but little Progreſs; for although they will live in a dry Stove, yet they will not thrive, nor will their Leaves appear ſo fine, as when they are preſerved in a vigorous growing State, and it is more for the Beauty of their Leaves, than any Hopes of their producing Fruit in this Country, that they are preſerved in Stoves; for though ſome of the Sorts have produced Flowers in *England*, yet none have ever ſhewn their Fruit here.

Some of theſe Plants are 12 or 14 Feet high in our Gardens, and a few Years ago there were Plants of the 5th Sort in the Garden at *Chelſea*, more than 20 Feet high, and produced Flowers two or three Years. The Stove in which theſe Plants are placed, ſhould, during the Winter Seaſon, be kept to the Ananas Heat, marked on the Botanical Thermometers. The Earth ſhould be light and rich, in which they are planted, and the Tan Bed frequently turned over and refreſhed. Their Waterings muſt be frequent in Summer, but not in too great Quantity. In Winter, a little once a Week in open Weather, and, in Froſt, once in a Fortnight, or three Weeks, will be ſufficient.

ANTHEMIS. *Lin. Gen. Plant.* 870. *Chamæmelum. Tourn. Inſt.* Chamomile.

The *Characters* are,

It is a Plant with a compound Flower whoſe common Empalement is hemiſpherical, and compoſed of many narrow Scales which are equal. The Border, or Rays of the Flower, is compoſed of many female Flowers, whoſe Petals are ſtretched out like Tongues on one Side, and are indented in three Parts at their Extremity. The Middle, or Diſk of the Flower, is compoſed of many hermaphrodite Florets, which are Funnel-ſhaped, erect, and cut into five Parts at the Top. Theſe have five ſhort narrow Stamina, which are crowned by cylindrical Summits, which are hollow. The Germen is ſituated at the Bottom, ſupporting a ſlender Style, crowned by two reflexed Stigma, the Germen afterward becomes an oblong naked Seed. The Female Flowers have no Stamina, but an oblong Germen in the Center ſupporting two inflexed Styles.

The *Species* are,

1. ANTHEMIS *foliis pinnato-compoſitis linearibus acutis ſubvilloſis. Lin. Sp. P.* 894. Chamomile with winged Leaves, compoſed of many very narrow pointed Parts, which are hoary. This is the *Chamæmelum nobile ſive Leucanthemum odoratius. C. B. P.* 135. common or noble Chamomile. There is a Variety of this with double Flowers, which is much propagated in the Gardens, but the Flowers are not ſo good for Medicine as the ſingle.

2. ANTHEMIS *receptaculis conicis paleis ſetaceis ſeminibus coronato-marginatis. Flor. Suec.* Chamomile with a conical Receptacle, of briſtly Chaff, and bordered Seeds. Wild Chamomile, or *May* Weed.

3. ANTHEMIS *receptaculis conicis paleis ſetaceis ſeminibus nudis. Lin. Sp. P.* Chamomile with a conical Receptacle, briſtly Chaff, and naked Seeds. *Chamæmelum fœtidum. C. P. B.* Stinking *May* Weed.

4. ANTHEMIS *florum paleis rigidis pungentibus. Flor. Leyd.* 172. Chamomile with ſtiff pungent Chaff between the Flowers.

5. ANTHEMIS *erecta foliorum apicibus ſubſpinoſis. Lin. Sp. Plant.* 893. Upright Chamomile with Leaves ending with Spines. *Spaniſh* Chamomile with a large Flower.

6. ANTHEMIS *foliis pinnatis denticulatis carnoſis caule ramoſo. Lin. Sp. Plant.* 893. Chamomile with pinnated Leaves, which are thick and indented, and a branching Stalk. *Chamæmelum maritimum.* Sea Chamomile.

7. ANTHEMIS *foliis pinnatifidis obtuſis planis, pedunculis hirſutis, folioſis calycibus tomentoſis. H. C.* Chamomile with plain blunt Leaves, winged at their Extremity, hairy Foot Stalks, and a leafy woolly Empalement. Hoary Sea Chamomile with a thick Wormwood Leaf.

8. ANTHEMIS *foliis ſimplicibus dentato-laciniatis. L. S. P.* Chamomile with ſingle indented cut Leaves. Broad leaved *Portugal* Chamomile, with a Buck's Horn Leaf.

9. ANTHEMIS *foliis pinnato-multifidis planis, laciniis linearibus acutis trifidis, pedunculis longiſſimis. H. C.* Chamomile with plain winged multifid Leaves, with very narrow acute Segments, which are trifid, and long Foot Stalks. *Chamæmelum Orientale.* Eaſtern Chamomile with a Wormwood Leaf.

10. ANTHEMIS *foliis ſimplicibus ovato-lanceolatis repando crenatis. L. S. P.* Chamomile with ſingle, oval, Spear-ſhaped Leaves, which are crenated. *Portugal* Chamomile with a Maudlin Leaf.

11. ANTHEMIS *caulibus unifloris decumbentibus foliis pinnato-multifidis. L. H. C.* Chamomile with ſingle Stalks lying on the Ground, terminated by a ſingle Flower, and winged Leaves. Pellitory of *Spain*.

12. ANTHEMIS *caule ramoſo foliis pinnato-multifidis ſetaceis, calycibus villoſis pedunculatis. Hort. Cliff.* 414. Chamomile with a branching Stalk, multifid winged Leaves which are briſtly, and hairy Foot Stalks. Ox Eye with *May* Weed Leaves. Of this there is a Variety with the Outſide of the Rays, of a purple Colour.

13. ANTHEMIS *foliis bipinnatis laciniis linearibus integris, pedunculis nudis longiſſimis. Flor. Leyd. Prod.* 171. Chamomile with double winged Leaves, cut into narrow whole Segments, and long naked Stalks. *Alpine* Ox Eye with a Wormwood Leaf.

14. ANTHEMIS *foliis pinnato-compoſitis linearibus glabris ſquamis calycis nitidiſſimis.* Chamomile with narrow, compound, winged Leaves, which are ſmooth, and the Scales of the Empalement very beautiful.

15. ANTHEMIS *foliis pinnatifidis linearibus brevibus, radiis longiſſimis trifidis.* Chamomile with narrow ſhort Leaves, which are winged at the Ends, and long trifid Rays.

16. ANTHEMIS *foliis bipinnatis ſerratis ſubtus tomentoſis caule Corymboſo. Lin. Sp. P.* 896. Chamomile with double winged Leaves, which are woolly on their under Side, ſawed on their Edges, and a Stalk terminated by a Corymbus. *Alpine* Ox Eye with a white Flower.

17. ANTHEMIS *foliis pinnatis acutè ſerratis ſubtus tomentoſis, pedunculis florum longiſſimis.* Chamomile with winged Leaves, which are ſharply ſawed, woolly underneath, and very long Foot Stalks to the Flowers. There is a Variety of this with white, and another with Sulphur-coloured Flowers.

18. ANTHEMIS *foliis ovatis integris ſeſſilibus floribus umbellatis ſparſis.* Chamomile with oval entire Leaves growing cloſe to the Stalks, and Flowers in looſe Umbels. *Eaſtern* Ox Eye with a Leaf of Coaſtmary.

19. ANTHEMIS *erecta foliorum apicibus ſubſpnioſis. Lin.*

Lin. Gen. Plant. 893. Upright Chamomile. whoſe Leaves are terminated with ſmall Spines. White flowering *Spaniſh* Chamomile with a large Flower.

20. ANTHEMIS *foliis pinnatifidis laciniatis, pedunculis nudis ſubvilloſis. Hort. Cliff.* 415. Chamomile with cut winged Leaves, and naked hairy Foot Stalks.

21. ANTHEMIS *caule decompoſito calycibus ramiferis. Hort. Cliff.* 413. Chamomile with a decompound Stalk, and a branching Empalement. Annual *Aſteriſcus* with childing Flowers, called by the *Arabs*, *Craſſas.*

22. ANTHEMIS *foliis trinervatis pedunculis terminalibus ramo longioribus. H. C.* Chamomile with Leaves dividing into threes, the Foot Stalks growing at the Extremity, which are longer than the Branches. Leaſt creeping Marſh *Chryſanthemum* with a Smallage Leaf.

The 1ſt Sort is the common Chamomile, which grows in Plenty on Commons, and waſte Land. It is a trailing perennial Plant, which puts out Roots from the Branches as they lie on the Ground, whereby it ſpreads and multiplies greatly; ſo that whoever is willing to cultivate this Plant, need only procure a few Slips in Spring, and plant them a Foot aſunder, that they may have Room to ſpread, and they will ſoon cover the Ground. Formerly this Plant was uſed for planting of Walks, which, when mowed and rolled, looked well for ſome Time, but being very ſubject to decay in large Patches, the Walks became unſightly, for which Reaſon it was diſuſed. The Flowers of this Sort are ordered for Medicinal Uſe, but the Market People generally ſell the double Flowers, which are much larger, but not ſo ſtrong as the ſingle. The double Sort is equally hardy, and may be propagated in the ſame Manner.

The 2d Sort is a common annual Weed, which grows among Corn, it flowers in *May*, ſo was called *May* Weed, though ſome have applied that Title improperly to the *Cotula fœtida*, which rarely flowers till late in *June.* This is the 3d Sort here enumerated, of which there is a Variety with double Flowers, which is preſerved by often Planting the Slips and Cuttings, ſo that although the Plant is naturally an annual, yet by this Method it may be continued, as are the *Chryſanthemums*, and ſome other annual Plants.

The 4th, 5th, and 8th Sorts are annual Plants, which grow naturally in *Spain*, *Portugal*, *Italy*, and the South of *France*, from whence their Seeds have been brought to *England*, where the Plants are preſerved in Botanic Gardens for the Sake of Variety. They riſe eaſily from Seeds ſown in the Spring, and require no other Culture, but to thin the Plants, where they grow cloſe, allowing them a Foot and a Half room each Way, and clean them from Weeds. They flower in *July*, and their Seeds ripen in *September.*

The 6th, 7th, 9th, and 10th Sorts are perennial Plants, theſe grow naturally in *Spain*, *Portugal*, and *Greece*, from whence their Seeds have been brought to *England*, and the Plants are preſerved in ſome curious Gardens for the Sake of Variety. They are hardy and may be propagated either by Seeds or Slips, if by Seeds, they ſhould be ſown in the Spring upon poor Land, where the Plants will continue much longer than in good Ground. The Slips may be planted during any of the Summer Months, obſerving to plant them in a ſhady Border, and water them until they have taken Root. In the Autumn they may be removed to the Places where they are to remain, and will require no other Care but to keep them clean from Weeds. Theſe Plants do not grow tall, but are buſhy, ſo ſhould be allowed Room to grow. Their Flowers are white, and continue from *July* to *October*, and the Seeds ripen in Autumn.

The 11th Sort is the Pellitory of *Spain*, the Roots of which are uſed for the Tooth-ach, being extremely warm; when they are applied to the Part affected, they draw out the cold Rheum, and are often ſerviceable. This is a perennial Plant, with a long taper Root like a Carrot, which grows naturally in *Spain* and *Portugal*, from whence their Roots are brought to *England.* The Branches of this trail upon the Ground, and ſpread a Foot or more on every Side, theſe are garniſhed with fine winged Leaves, like thoſe of the common Chamomile, at the Extremity of each Branch is produced one large ſingle Flower, like Chamomile but much larger, the Rays of which are of a pure white within, but purple on their outſide. After the Flowers are paſt, the Receptacle ſwells to a large ſcaly Cone; between theſe Scales are lodged the Seeds; it flowers in *June* and *July*, and the Seeds ripen in *September*, but unleſs the Seaſon is warm and dry, they do not ripen in *England*, for the Wet falls between the Scales, and rots them in Embryo.

The 12th Sort is the Ox Eye of the Shops; this is an annual Plant, which riſes upwards of two Feet high, ſending out many lateral Branches, which are garniſhed with fine winged Leaves, each Branch being terminated by a ſingle Flower, which in ſome are white, others yellow, and ſome with naked Heads, having no Rays. Theſe have been by many ſuppoſed to be diſtinct Species, but I have frequently had all the Varieties ariſe from Seeds of the ſame Plant. This flowers in *July*, *Auguſt*, and *September*, and the Seeds ripen in *September* and *October*, and may be treated in the ſame Manner as the annual Sorts before mentioned.

The 13th Sort is perennial; it branches out on every Side, but doth not riſe more than two Feet high, the Leaves are hoary, and have ſome Reſemblance to thoſe of the common Wormwood; the Flowers are white, and like thoſe of the Ox Eye Daiſy, ſtanding ſingle upon long Foot Stalks. This Plant begins to flower in *June*, and continues till the Froſt puts a ſtop to them. It may be propagated either by Seeds or Slips as the perennial Sorts before mentioned, and is equally hardy.

The 14th Sort is an annual Plant, which grows little more than a Foot high, ſending out ſeveral lateral Branches, which are garniſhed with ſmooth narrow winged Leaves, rather finer cut than thoſe of Chamomile; the Flowers grow at the Extremity of the Branches, which are of a deep yellow Colour, and in Size like thoſe of the Corn Marygold; the Empalement of the Flower is compoſed of many neat ſilvery Scales. This flowers in *Auguſt*, and the Seeds are ripe in *October.* I received the Seeds of this Sort from *Florence*, but do not know the natural Place of its Growth, but it may be ſown in an open Bed of light Earth, and requires no more Care than the annual Sorts before mentioned.

The Seeds of the 15th Sort I received from the *Cape of good Hope.* This is alſo an annual Plant, which grows little above a Foot high, with an upright Stalk putting out ſome lateral Branches, which are garniſhed with ſhort narrow Leaves, divided at their Extremity. The Flowers ſtand on long Foot Stalks, the Rays are of a bright yellow within, and purple on their Outſide; theſe are long and narrow, the Empalement is compoſed of ſilvery Scales: This flowers in *July*, and will continue to produce Flowers till Winter, when the Roots decay. The Seeds of this Sort ſhould be ſown in Autumn in Pots filled with light Earth, and placed under a common Frame in Winter, to protect them from Froſt, but they ſhould have free Air in mild Weather; in the Spring the Plants will come up, when they muſt be inured to the open Air, into which they ſhould be removed as ſoon as the Danger of hard Froſts is over, and treated as other hardy exotick Plants. By this Method good Seeds may be obtained, whereas thoſe Plants which ariſe from Seeds ſown in the Spring, will not perfect Seeds unleſs the Seaſon proves warm.

The 16th, 17th and 18th Sorts are perennial Plants. Theſe are propagated by Seeds, which they produce in Plenty; they may be ſown on a Bed of common Earth in the Spring, and when the Plants are ſtrong enough to remove, they may be tranſplanted into large open Borders, near Shrubs, where they may have room to grow, for they ſpread out on every Side, therefore require three Feet Diſtance from other Plants; in theſe large open Spots, they will make a pretty Variety from *June* to *November*, during which Time they continue in flower: Some of theſe are white, others are of a ſulphur, and ſome have yellow Flowers, but theſe vary from Seed; the Eaſtern Sorts grow taller, and the Flowers larger than the common, in other Particulars they are the ſame.

The 19th and 20th Sorts are annual Plants, which grow naturally in *Spain*, and the Iſlands of *Greece*. The 1ſt Sort hath an upright Stalk two Feet high, ſending out many lateral Branches: The Flowers of this are white and large; it flowers in *June*, and continues till the Froſt ſtops it. The 20th is a low branching Plant, never riſing a Foot high, but the Branches extend on every Side to a conſiderable Diſtance: The Flowers of this are white, and like thoſe of the common Chamomile, theſe are hardy, ſo may be treated in the ſame Manner as the before mentioned annual Sorts.

The Seeds of the 21ſt were brought from *Africa*, by the late Dr. *Shaw*, and diſtributed to many curious Botaniſts in *Italy*, *France*, and *England*, where the Plants were raiſed. This grows near two Feet high, with an upright Stem, having a ſingle Flower at the Top, from whoſe Empalement there are two or three Foot Stalks put out horizontally, about two Inches long, each having a ſingle Flower, ſmaller than the firſt, like the Childing Marygold, or Hen and Chicken Daiſy. The Seeds ſhould be ſown in Autumn, and treated as is before directed for the 15th Sort, otherwiſe the Seeds are ſeldom perfected in *England*.

The 22d Sort grows naturally in *Jamaica*, from whence I received it, with another Sort having larger Leaves: They came up as Weeds in a Tub of Earth brought over with other Plants; it trails its Branches on the Ground, and ſends out Roots at every Joint, ſo that in a ſhort time, it will ſpread over a large Spot; it is too tender to thrive in *England*, unleſs placed in a Stove; this like ſome other trailing Plants is not very productive of Flowers; theſe grow ſingle upon long naked Foot Stalks, which are produced at the Extremity of the Branches, and are of an Orange Colour; it increaſes faſt enough by its trailing Branches, which will root into thoſe Pots which ſtand near them, ſo may be taken off and tranſplanted; it alſo produces Seeds ſometimes, but the other is the quicker Method to propagate it.

ANTHERICUM *Lin. Gen. Plant.* 380. *Phalangium. Tourn. Inſt.* Spiderwort.

The *Characters* are,

The Flower hath no Empalement, and is compoſed of ſix oblong blunt Petals, which ſpread open. It hath ſix upright Awl-ſhaped Stamina, which are crowned by ſmall Summits, having four Furrows. The Germen which is ſituated in the Center is three cornered, ſupporting a ſingle Style which is as long as the Stamina, and crowned by a three cornered blunt Stigma. The Germen afterward becomes an oval ſmooth Capſule, having three Furrows, opening in three Cells, which are filled with angular Seeds.

The *Species* are,

1. Anthericum *foliis planis ſcapo ramoſo corollis revolutis. L. S. P. Anthericum* with plain Leaves, a branching Stalk, and Flowers turning backward. Aſphodel, with rough compreſſed Leaves and a ſpreading Stalk.

2. Anthericum *foliis planis ſcapo ramoſo corollis planis. Lin. Sp. Plant.* 310. *Anthericum* with plain Leaves, a branching Stalk, and Plain Petals. Branching Spiderwort with a ſmall Flower.

3. Anthericum *foliis planis ſcapo ſimpliciſſimo. H. Up. Anthericum* with plain Leaves, and a ſingle branchleſs Stalk. Branchleſs Spiderwort with a ſmall Flower.

4. Anthericum *foliis carnoſis teretibus caule fruticoſo, L. S. P. Anthericum* with fleſhy taper Leaves, and a ſhrubby Stalk. Cape Spiderwort with Stalks and pulpy Onion Leaves.

5. Anthericum *foliis carnoſis ſubulatis planiuſculis. H. U. Anthericum* with fleſhy plain Awl-ſhaped Leaves. Low Cape Spiderwort, with Aloe-ſhaped pulpy Leaves.

6. Anthericum *foliis carnoſis ſubulatis ſemiteretibus ſtrictis. H. U. Anthericum* with Awl-ſhaped fleſhy half taper Leaves, growing cloſe. Low Aſphodel, with Awl-ſhaped ſucculent Leaves.

7. Anthericum *foliis carnoſis ſubulatis teretibus. H. U. Anthericum*, with awl ſhaped fleſhy Leaves, which are taper. Small yellow *African* Spider-wort, with narrow Leaves.

8. Anthericum *acaule foliis carnoſis teretibus ſpicis florum longiſſimis laxis. Fig. Plant. pl.* 39. Low *African* Spiderwort with taper fleſhy Leaves and very long looſe Spikes of Flowers.

9. Anthericum *ſeſſile foliis linearibus planis caule decumbente. Fig. Plant. pl.* 39. f. 2. Low Spiderwort with narrow plain Leaves and a trailing Stalk.

10. Anthericum *foliis enſiformibus filamentis lanatis Flor. Suec.* 268. *Anthericum* with Sword-ſhaped Leaves, and downy Stamina. Marſh Yellow Aſphodel.

11. Anthericum *foliis enſiformibus perianthiis trilobis filamentis glabris. Anthericum* with Sword-ſhaped Leaves, an Empalement with three Lobes and ſmooth Stamina. Marſh *Alpine* Spiderwort, with an Iris Leaf.

The 1ſt Sort grows near two Feet high, the Stalk branches out on every Side; each Branch being terminated by a looſe Spike of Flowers, which are white, and the Petals are turned backward to their Foot Stalk. The

Leaves of this Sort are flat, and the Root is perennial, but the Branches decay in Autumn.

The 2d Sort hath a perennial Root, but an annual Stalk, which decays in Autumn; the Stalks riſe about the ſame Height as the former, ſending out many lateral ones in like Manner, terminated by looſe Spikes of Flowers, which are white, but the Petals are plain, and do not turn back as in the other Sort.

The 3d Sort hath plain Leaves and an unbranching Stalk, in which it chiefly differs from the former. The Root is perennial, but the Stalks decay in Winter.

Theſe three Sorts grow naturally in *Spain*, *Portugal*, and other warm Countries; they were more common ſome Years ago in the *Engliſh* Gardens, than at preſent; for the ſevere Winter in 1740, killed moſt of their Roots. Theſe flower in *June* and *July*, and their Seeds are ripe in *September*. They are propagated by Seeds which ſhould be ſown in Autumn, for thoſe which are ſown in the Spring, never come up the ſame Year, but remain in the Ground till the following Spring, ſo often miſcarry. They ſhould be ſown in a Bed of light ſandy Earth, in a warm Situation, and when the Plants come up, they muſt be kept clean from Weeds during the Summer, and in Autumn when their Leaves decay, they ſhould be carefully taken up, and tranſplanted into a Bed of light Earth, at a Foot Diſtance from each other. If the Winter ſhould prove ſevere, the Bed ſhould be covered with Straw, Peaſe Haulm, or ſuch light Covering, to keep out the Froſt, or if ſome old Tan from a hot Bed is ſpread over the Ground, it will prevent the Froſt from penetrating it, and preſerve the Roots. In this Bed they may remain one Year, by which Time they will be ſtrong enough to flower. Therefore the following Autumn they ſhould be carefully taken up, ſo as not to break their Roots, and planted in the Borders of the Flower Garden, where they will laſt ſeveral Years, if they are not killed by Froſt, to prevent which, ſome rotten Tan ſhould be laid over the Roots in Winter, which will always ſecure them.

The 4th Sort has been long preſerved in many Gardens near *London*, and was formerly known among the Gardeners, by the Title of *Onion leaved Aloe*. This Plant produces many ligneous Branches from the Root, each having a Plant with long taper Leaves, in Shape of thoſe of the Onion, which are full of a yellow Pulp very juicy. Theſe Plants ſend out Roots, which run down and faſten themſelves into the Earth, by which they multiply greatly. The Flowers are produced on long looſe Spikes, and are yellow; theſe appear at different Times, ſo that the Plants are not long deſtitute of Flowers. They are ſucceeded by round ſmooth Seed Veſſels, having three Cells, filled with triangular Seeds; but as the Plant multiplies ſo faſt by Offſets, the Seeds are little regarded. It grows naturally at the *Cape of Good Hope*, and requires a little Shelter in Winter, but in mild Seaſons I have had Plants live without any Cover, which were planted cloſe to a warm Wall.

The 5th and 6th Sorts grow cloſe to the Ground never riſing with any Stalk. The 5th hath broad, flat, pulpy Leaves reſembling thoſe of ſome Sorts of Aloe, ſo was formerly by Gardeners called Aloe with Flowers of Spiderwort. The Leaves ſpread open flat on the Ground, and the Flowers are produced on looſe Spikes, like the former, but they are ſhorter. The Flowers are yellow, and appear at different Seaſons. This is propagated by Offſets, which are put out in Plenty, and muſt be planted in Pots filled with light ſandy Earth, and in Winter placed in the Green-houſe, and treated as other hardy ſucculent Plants, which come from the *Cape of Good-Hope*, where this Plant grows naturally. It muſt be kept pretty dry in Winter, and if ſcreened from Froſt, it will require no artificial Warmth.

The 6th Sort hath long narrow pulpy Leaves, which are almoſt taper, but flatted on their upper Side; this ſends out many Offſets, by which it may be increaſed plentifully. The Flowers are yellow, and grow on long looſe Spikes, as the former; theſe appear at different Seaſons; thoſe of the Spring and Summer are ſucceeded by Seed Veſſels in great Plenty, which ripen very well. It muſt be treated in the ſame Manner as the former.

The 7th Sort is annual: This is a low Plant growing cloſe to the Ground, having pretty long ſucculent Leaves, which are taper, but flatted on their upper Side; the Flowers grow in looſe ſpikes, which are ſhorter than either of the other Sorts. They are yellow, and are ſucceeded by round Seed Veſſels, like thoſe of the former Sorts; the Plants periſh ſoon after their Seeds ripen. The Seeds of this Sort ſhould be ſown on a warm Border of light Earth, in *April*, where they are to remain, and when the Plants come up, they will require no other Care but to keep them clean from Weeds, and to thin them where they are too cloſe. This Sort flowers in *July*, and the Seeds ripen in *October*.

The 8th Sort never riſes to a Stalk, but the Leaves come out cloſe to the Ground. Theſe are long, taper, ſucculent, and of a Sea-green Colour, growing erect; the Flower Stems riſe between the Leaves, and are near three Feet long. The upper Half being thinly garniſhed with yellow Flowers, ſhaped like thoſe of the other Species. Theſe appear at different Seaſons, ſo that the Plants are ſeldom long deſtitute of Flowers. This Sort doth not ſend out Offſets freely, but as it produces Seeds annually, it may be had in Plenty. It muſt be treated as the 4th, 5th, and 6th Sorts.

The 9th Sort is a Native of *Jamaica*, where it grows naturally in moſt Places; this is a very low Plant, having many long narrow Leaves like thoſe of Graſs; from between theſe come out the Flower Stalks, which are five or ſix Inches in Length, falling to the Ground; at the Top the Flowers are collected into ſmall Heads; theſe are yellow, and ſhaped like thoſe of the former. They appear in *June* and *July*, and their Seeds ripen in *Auguſt* and *September*. This is tender, ſo muſt be placed in a Stove, otherwiſe the Plants will not live in this Country: It may be eaſily propagated by Seeds, which ſhould be ſown on a hot Bed in Spring, and when the Plants come up muſt be treated as is directed for other tender exotic Plants from the ſame Country.

The 10th and 11th Sorts grow naturally on Bogs in moſt of the Northern Countries, the 10th is common in many Parts of *England*, but particularly in *Lancaſhire*, from whence it had the Title of *Lancaſhire Aſphodel*, it alſo grows on a Bog upon *Putney Heath*. The other grows naturally in *Denmark*, *Sweden*, and *Lapland*. Theſe are both low Plants, having narrow Leaves, which grow cloſe to the Ground, the Flower Stems riſe about ſix

Inches high, being terminated by a looſe Spike of ſmall yellow Flowers. Theſe differ, the Stamina of the 10th being woolly, whereas thoſe of the other are ſmooth. Theſe Plants growing naturally on Bogs, are with Difficulty preſerved in Gardens.

ANTHERÆ, are the Summits or little Tops in the Middle of a Flower, ſupported by the Stamina or Chives.

ANTHOLYZA. We have no *Engliſh* Name for this Plant.

The *Characters* are,

It hath an imbricated Sheath growing alternate, and is permanent; the Flower is of one Leaf, which is tubulous, and opens above with compreſſed Jaws. The upper Lip is ſlender, long, erect, and waved; the two Jaws are ſhort, and joined at their Baſe; the under Lip is trifid, ſhort, and the middle Segment turns downward; it hath three long ſlender Stamina, two of which are under the upper Lip, and the other lies in the under Lip; theſe are crowned by pointed Summits. Under the Flower is ſituated the Germen, ſupporting a ſlender Style the Length of the Stamina which is crowned by a ſlender trifid reflexed Stigma. The Germen becomes a roundiſh three cornered Veſſel having three Cells, in which are many triangular Seeds.

The *Species* are,

1. ANTHOLYZA *ſtamine unico declinato. L. S. P. Antholyza* with one Stamen declining. Cornflag with a ſcarlet Flower, whoſe upper Lip is erect and fiſtular.

2. ANTHOLYZA *foliis linearibus ſulcatis floribus albis uno verſu diſpoſitis. Fig. Plant. Pl.* 40. Strange Cornflag with narrow furrowed Leaves, and white Flowers ranged on one Side of the Stalk.

There has lately been many other Species raiſed from Seeds which were brought from the *Cape of Good Hope*, but they have not as yet produced any Flowers in *England*, ſo I have not inſerted them here.

The 1ſt Sort hath round red bulbous Roots, from which ariſe ſeveral rough furrowed Leaves, which are near a Foot long, and half an Inch broad; between theſe comes out the Flower Stem immediately from the Root, which riſes two Feet high, is hairy, and hath ſeveral Flowers coming out on each Side. Theſe are of one Leaf cut into ſix unequal Parts at the Top: One of theſe Segments is ſtretched out much beyond the other, ſtanding erect; the Margins are waved and cloſed together wrapping up the three Stamina. Theſe Flowers are red and appear in *June*, and the Seeds ripen in *September*.

The Roots of the 2d Sort are in Shape and Size like thoſe of the vernal Crocus, but the outer Skin is thin and white; from this ariſes five or ſix long narrow Leaves, which are deeply furrowed. Between theſe ariſe the Flower Stem, a Foot and a Half high, bending on one Side toward the Top, where the Flowers come out, ranged on one Side, ſtanding erect. Theſe have each a Spatha or Sheath, of one Leaf, divided into two, ending in Points, and are permanent. The Flower is of one Leaf, having a long Tube, but divided into ſix unequal Segments at the Top, which ſpread open, their Margins being waved and turned inward. The three Stamina riſe under the upper Segment, which is larger than the others, and below is ſituated the trifid Style, crowned with purple Stigma. After the Flower is paſt, the Germen becomes a three cornered Seed Veſſel, opening in three Cells, which are filled with triangular Seeds. The Flowers are white, appear in *May*, and the Seeds ripen in *Auguſt*.

Theſe Plants are Natives of *Africa*, from whence their Seeds have been obtained, and were firſt raiſed in the *Dutch* Gardens.

They are propagated by Offsets, which the bulbous Roots ſend forth in great Plenty; or by Seeds, which are ſometimes perfected in *Europe*. Theſe Seeds ſhould be ſown ſoon after they are ripe; for if they are kept out of the Ground till the following Spring, they often miſcarry, and always remain a Year or more in the Ground before they grow. If the Seeds are ſown in Pots of light Earth, and plunged into an old Bed of Tan which has loſt its Heat, and ſhaded in the Middle of the Day in hot Weather, the Seeds will come up the following Winter: Therefore they muſt be kept covered with Glaſſes to ſcreen them from Cold, otherwiſe the young Plants will be deſtroyed. Theſe muſt remain in the Pots two Years, by which Time they will have Strength enough to be planted each into a ſeparate ſmall Pot filled with light Earth. The Time for tranſplanting theſe Roots is in *July* or *Auguſt*, when their Leaves are decayed. In Summer the Pots may be placed in the open Air, but in Winter they muſt be removed into a warm Green-houſe, or placed under a hot Bed Frame, for they are not very tender; but where any Damp ariſes, it is very apt to occaſion a Mouldineſs upon their Leaves. The Roots ſhoot up in Autumn, and the Flowers begin to appear in *May*; the Seeds ripen in *Auguſt*, and ſoon after their Leaves and Stalks decay; when the Roots may be taken up, and kept ſix Weeks or two Months out of the Ground, ſo may be eaſily tranſported from one Country to another at that Time. The Flowers are a great Ornament to the Green-houſe, and as the Plants require but little Culture ſo deſerve a Place in every good Garden.

ANTHOSPERMUM, Amber Tree, *vulgò*.

The *Characters* are,

It is male and female in different Plants; the male Flowers have no Petals, but a coloured Empalement of one Leaf, which is cut into four Parts almoſt to the Bottom. Out of the Bottom ariſe four ſlender Stamina, crowned with oblong ſquare Summits, having a deep Furrow through their Middle. The female Flowers have the ſame Structure as the male, but have no Stamina; inſtead of which, there is an oval Germen, ſituated in the Bottom, ſupporting two recurved Styles crowned with a ſlender Stigma. The Germen afterward becomes a roundiſh Capſule having four Cells, which contain ſeveral angular Seeds.

We know but one *Species* of this Genus, *viz.*

ANTHOSPERMUM *mas & fœmina. Hort. Cliff.* 455. Male and female Amber Tree.

This Plant has been long known in curious Gardens under the Title of *Frutex Africanus, ambram ſpirans*, or Amber Tree; by ſome Ambergris, from the Scent being ſuppoſed to be like that of Ambergris.

It is preſerved in moſt curious Gardens, which have Collections of tender Plants, and is eaſily propagated by planting Cuttings during any of the Summer Months, in a Border of light Earth; which will take Root in ſix Weeks Time, provided they are watered and ſhaded: Or if theſe Cuttings are planted in Pots, and plunged into a very moderate hot Bed, they will take Root ſooner, and there will be a greater Certainty of their growing. Then they ſhould be taken up with a Ball of Earth to one with ſtriped Leaves. The laſt is propagated by Slips and Cuttings, which readily take Root any Time in the Spring or Summer. The different Colours of the Flowers are variable from Seeds.

The 4th Sort grows naturally in the Iſlands of the *Archipelago*, from whence I received the Seeds. The Leaves of this are much broader, the Flowers much larger, and the Spikes longer, than in any of the other Sorts. The Colours of the Flowers are as changeable in this as the former, when raiſed from Seeds; but as this is the moſt ſpecious Kind, ſo it better deſerves propagating than the common, eſpecially as it is equally hardy.

The 5th Sort hath long narrow hairy Leaves, the Flowers are large, and the Spike is ſhorter than the former; there are ſome Varieties in the Colour of the Flowers, and it is equally hardy with the common Sort.

The 6th Sort is an annual Plant, which ſeldom grows more than a Foot high; the Leaves of this are very narrow and ſmooth: the Flowers come out from the Wings of the Leaves ſingle, ſtanding on long Foot Stalks; theſe are very white, with a dark Bottom. If the Seeds of this Sort are permitted to ſcatter, the Plants will come up, and require no other Care but to thin them and keep them clean from Weeds.

The 3d, 4th, and 5th Sorts are raiſed from Seeds, which ſhould be ſown in a dry Soil, which is not too rich, either in *April* or *May*; and in *July* the Plants may be planted out into large Borders, where they will flower the Spring following; or they may be ſown early in the Spring, for flowering the ſame Autumn, but then they are not ſo likely to endure the Winter; and if the Autumn proves bad, they will not perfect their Seeds.

Theſe Plants grow extremely well upon old Walls or Buildings, in which Places they will endure for ſeveral Years; whereas thoſe planted in Gardens ſeldom laſt longer than two Years, unleſs they are planted in a very poor Soil, and the Flowers often cropped, and not ſuffered to ſeed; but any of theſe Sorts may be continued, by planting Cuttings in any of the Summer Months, which will eaſily take Root.

All the Sorts of Snap-dragons are pretty Ornaments in a Garden, and requiring very little Culture are rendered more acceptable. They are all hardy Plants, and will reſiſt the Cold of our Winters extremely well, eſpecially if they are planted on a dry, gravelly, or ſandy Soil; for when they are planted in a rich moiſt Soil, they will grow very luxuriant for a Time, but are very ſubject to Rot in Autumn or Winter; and are much more ſuſceptible of Cold, than when they are in a dry, hungry, rocky Soil; ſo that theſe Plants may be placed amongſt Stones, or they will grow in the Joints of old Walls, where they may be placed ſo as to render ſome abject Parts of a Garden very agreeable, for they will continue in flower ſeveral Months; and if the Seeds are permitted to ſhed, there will be a continual Supply of young Plants, without any Trouble.

Wherever theſe Plants are deſigned to grow on Walls, or on a rocky barren Soil, the Seeds ſhould be ſown the Beginning of *March*, where they are deſigned to remain (for if the Plants are firſt raiſed in a better Soil, and afterward tranſplanted into thoſe Places, they ſeldom ſucceed well). When the Plants are come up, they will require no other Culture but to keep them clear from Weeds; and where they come up too thick, to pull ſome of them out, ſo as to give them Room to grow. In *July* theſe Sorts will begin to flower, and will continue flowering till the Froſt prevents them. Thoſe Plants which grow on Walls, will have ſtrong woody Stems, which will continue two or three Years or more, and are rarely hurt by Froſt.

APARINE. Gooſe-graſs or Clivers.

The common Sort grows wild every where, the Seeds ſticking to the Cloaths of People that paſs by where they grow: It is ſometimes uſed in Medicine, but is too common a Weed to be admitted into a Garden.

There are ſome other Sorts of this Plant which are kept in Botanic Gardens for the Sake of Variety, which I ſhall beg Leave to enumerate here.

1. APARINE *ſemine lævi. Tourn.* Gooſe-graſs with a ſmooth Seed. This is under *Gallium* in *Linnæus.*

2. APARINE *ſemine coriandri ſaccharati. Park. Theat.* Gooſe-graſs with ſweet Seeds like Coriander.

3. APARINE *pumila ſupina, flore cæruleo. Tourn.* Low trailing Gooſe-graſs, with a blue Flower. This is the *Vaillantia* of *Linnæus.*

All theſe Plants, if they are permitted to ſcatter their Seeds will maintain themſelves in a Garden without any other Culture, than that of preventing other Weeds from over-growing them, theſe being all very low Plants.

The 1ſt Sort grows wild in *Cambridgeſhire*, as doth the 3d about *Liphoeck* in *Hampſhire*, where I have gathered it.

APHACA, Vetchling.

The *Characters* are,

The Empalement is of one Leaf, ſlightly indented at the Top in five Parts. The Flower is of the Butterfly Kind, the Standard being large and Heart-ſhaped, the Wings are ſhorter and obtuſe; the Keel is the Length of the Wings, and divided ſlightly in the Middle. It hath ten Stamina, nine joined and one ſingle; theſe are crowned by round Summits. In the Center is placed an oval Germen, ſupporting a ſingle Style, crowned by a hairy Stigma. The Germen afterward becomes a ſhort Pod, containing two or three round Seeds. To which we muſt add, that it hath only two roundiſh Leaves growing at each Joint, from between which proceeds the Tendril.

We have but one *Species* of this Plant, *viz.*

APHACA. *Lob. Icon.* 70. Yellow Vetchling. The Figure of this is exhibited in the 8th Number of Plants.

This Plant is found wild in divers Parts of *England*, on arable Land, but is ſeldom preſerved in Gardens. It is an annual Plant, which periſhes ſoon after the Seeds are perfected. The ſureſt Method to cultivate this Plant, is to ſow the Seeds on a Bed of light Earth in Autumn, ſoon after they are ripe. Theſe Seeds ſhould be ſown where the Plants are deſigned to remain, for they ſeldom ſucceed well if they are tranſplanted. All the Culture theſe Plants require, is to keep them clear from Weeds, and to thin them where they come up too cloſe, leaving them about ten Inches or a Foot aſunder.

APIOS. *See* Glycine.

APIUM. Parſley.

The *Characters* are,

It is a Plant with an umbelliferous Flower; the Rays of *the great Umbel are few, but thoſe of the ſmaller are many; the Involucrum is in ſome Species of one Leaf, and in others of many; the Petals of the greater Umbel are uniform; theſe are round, equal, and turn inward. Each Flower has five Stamina, which are crowned by roundiſh Summits. Under the Flower is ſituated the Germen, ſupporting two reflexed Styles, which are crowned by blunt Stigma; the Germen afterward becomes an oval channeled Fruit, dividing into two Parts, having two oval Seeds channeled on one Side, and plain on the other.*

The *Species* are,

1. APIUM *foliolis caulinus linearibus. Hort. Cliff.* 108. Parſley with very narrow Leaves on the Flower Stems. This is the *Apium hortenſe.* Common Parſley.

2. APIUM *foliis radicalibus amplioribus criſpis caulinis ovato-multifidis.* Parſley with the lower Leaves very broad and curled, the upper oval, and cut into many Segments. Curled Parſley.

3. APIUM *foliis radicalibus trifidis, ſerratis petiolis longiſſimis.* Parſley with under Leaves divided into three Parts, which are ſawed, and have very long Foot Stalks. The large rooted Parſley.

4. APIUM *foliolis caulinis cuneiformibus. Hort. Cliff.* 107. Parſley with the lower Leaves faſhioned like a Wedge. Smallage or Water Parſley.

5. APIUM *foliis erectis, petiolis longiſſimis foliolis quinque lobatis ſerratis.* Parſley with upright Leaves, very long Foot Stalks, and the ſmaller Leaves compoſed of five Lobes which are ſawed. Upright *Italian* Celery.

6. APIUM *foliis patulis, petiolis brevibus, foliolis quinis ſerratis, radice rotundo.* Parſley with ſpreading Leaves, ſhort Foot Stalks, the ſmaller Leaves of five Parts, and a round Root. Celeriac or Turnep-rooted Celery.

7. APIUM *foliis radicalibus trilobatis, caulinis quinquelobatis crenatis.* Parſley with under Leaves having three Lobes, and thoſe on the Stalks five Lobes, which are indented. Greateſt *Portugal* Parſley, with a Leaf having three Lobes and a yellowiſh Flower.

The 1ſt Sort is the common Parſley, which is generally cultivated for culinary Uſe; and is what the College of Phyſicians have directed to be uſed in Medicine, under the Title of *Petroſelinum*; for when *Apium* is preſcribed, the ſmallage is always intended.

The 2d Sort has generally been ſuppoſed to be only a Variety of the 1ſt, but from many Years Trial I have always found, that if the Seeds are carefully ſaved from Plants of the curled leaved Parſley, it will conſtantly produce the ſame; there are few Perſons who will be at the Trouble to ſave the Seeds ſo carefully, as not to have ſome of the common Sort mixed with it; for when Seeds are bought at the Shops, there is generally a Mixture of both: The only Method to have it good, is to ſeparate all thoſe Plants which have plain Leaves from the curled, as ſoon as they are diſtinguiſhable, leaving only the right Kind; if this be duly obſerved, the Seeds will conſtantly produce the ſame.

The 3d Sort is chiefly cultivated for their Roots, which are now commonly ſold in the *London* Markets; the Leaves of this Sort have much longer Foot Stalks, and the Subdiviſions are not ſo numerous as in the common Parſley; the Lobes of the Leaves are much larger, and of a darker Green, ſo that it is eaſily diſtinguiſhed from the common Sort by its Leaves, but the Roots are ſix Times as large as the common Parſley can be brought to with the utmoſt Culture. I have ſown the Seeds of both Sorts for ſeveral Years on the ſame Spot of Ground, and have thinned the Plants when young, to an equal Diſtance, and given the ſame Culture to both; but when their Roots were taken up, thoſe of the common Sort were not larger than a Man's Finger, but the other were as large as full grown Carrots, and were very tender and ſweet, whereas the other were ſtringy and ſtrong; and this Difference conſtantly holds, ſo it may be allowed to be ſpecifically different. This Sort was many Years cultivated in *Holland*, before the *Engliſh* Gardeners could be prevailed on to ſow it. I brought the Seeds of it from thence in 1727, and would then have perſuaded ſome of the Kitchen Gardeners to make Trial of it, but they refuſed to accept of it, ſo that I cultivated it for ſeveral Years before it was known in the Markets.

The 4th Sort is commonly known by the Title of Smallage. This is what the Phyſicians intend when they preſcribe *Apium.*

The 5th Sort is the Celery, and the 6th Sort was ſuppoſed to be a degenerate Species from it, but I cannot agree to this opinion; for from many Years Trial, I have never found it vary. The Leaves of this Sort are ſhort, when compared with thoſe of the other, and ſpread open horizontally, and the Roots grow as large as common Turneps. All the Difference which I have obſerved to ariſe from the Culture, has been only in the Size of the Roots, thoſe on rich Gronnd, which were properly cultivated were much larger than thoſe on poorer Land, but the Leaves and outward Appearance of the Plants were never altered, ſo that I make no Doubt of its being a different Species.

The Seeds of the 7th Sort I received from the Royal Garden at *Paris*, many Years ſince, where it had been long preſerved, and maintained its Difference; and from near twenty Years cultivating it in the Garden at *Chelſea*, I have found the ſame, ſo that I cannot doubt of its being different from all the other Species.

The broad-leaved Garden Parſley, mentioned by *Caſpar Baubin*, and the round-leaved *Portugal* Parſley, mentioned by *Tournefort*, I believe are only Varieties of the common Parſley; for if they are diſtinct Species, all the Seeds which I have received from different Parts of *Europe*, under thoſe Titles, have been wrong, for the Plants which have riſen from thoſe Seeds, have always proved to be the common Sort.

The common Parſley muſt be ſown early in the Spring; and the Plants ſeldom appear in leſs than ſix Weeks after the Seeds are ſown. This Sort is generally ſown in Drills by the Edges of Borders in the Kitchen Gardens near *London*, becauſe it is much eaſier to keep it clear from Weeds, than if the Seeds are ſown promiſcuouſly on a Border, and the Parſley is much ſooner cut for Uſe: But when the Roots are deſired for medicinal Uſe, then the Seeds muſt be ſown thin; and when the Plants come up, they ſhould be hoed out ſingle, as is practiſed for Carrots, Onions, *&c.* obſerving alſo to cut up the Weeds: the Roots will be fit for Uſe in *July* or *Auguſt.*

There are ſome Perſons who are afraid to uſe Parſley in their Kitchens, leſt they ſhould ſuffer by having the leſſer Hemlock mixed with it, whoſe Leaves are ſo like Parſley, *ſilibus floribus lateralibus, caule ſcandente.* Dogſbane with oblong Heart-ſhaped Leaves, which end in a Point, Flowers growing at the Wings of the Leaves, and a climbing Stalk. Climbing Dogſbane with oblong pointed Leaves, and large yellow open Flowers.

11. Apocynum *foliis cordatis glabris floribus villoſis lateralibus petiolis longioribus caule ſcandente.* Dogſbane with ſmooth Heart-ſhaped Leaves, hairy Flowers growing from the Side of the Branches, with longer Foot Stalks, and a climbing Stalk. Climbing Dogſbane with large yellow hairy Flowers, and ſwelling angular Pods, which are ſmooth.

The 1ſt Sort grows naturally in *North America.* This hath an annual Stalk, and a perennial Root; the Stalks riſe about three Feet, grow upright, and are garniſhed with ſmooth oval Leaves, growing oppoſite. Theſe, as alſo the Stalks, abound with a milky Juice, which flows out when they are broken, the Flowers are collected in a kind of Umbel, growing at the Top of the Stalks. Theſe are white, and the Nectariums in the Bottom, have a purpliſh Caſt; the Flowers are of one Leaf, divided into five Parts at the Top. Theſe are ſeldom ſucceeded by Pods in *England*, but the Plant is propagated by parting of the Roots. It is hardy, ſo will thrive in full Ground, but the Soil ſhould be light or dry, otherwiſe the Roots are apt to rot in Winter. The beſt Time to part the Roots is in *March*, before they begin to put out new Stalks.

The 2d Sort is a Native of the ſame Country, the Roots of this Sort creep far in the Ground, ſo that when planted in a Garden, it is apt to ſpread ſo much, as to be troubleſome. The Stalks of this Sort grow about two Feet high, and are red; theſe are garniſhed with oblong ſmooth Leaves, ſet on by Pairs oppoſite, and abound with a milky Juice as the former. Towards the upper Part of the Stalk, the Flowers come out from the Wings of the Leaves collected in ſmall Bunches, which are of an herbaceous white Colour, and very ſmall, ſo make no great Appearance, therefore are ſeldom admitted into Gardens, except for Variety. This is very hardy, and propagates faſt by its creeping Roots. Both theſe Sorts flower in *July*, and in Autumn their Stalks decay.

The 3d Sort grows upon a ſmall Iſland in the Sea, near *Venice*, but is ſuppoſed to have been originally brought from ſome other Country. There are two Varieties of this, one with a purple, and the other with a white Flower. The Roots of this creep pretty much, by which it is propagated, for it never produces any Seeds either in the Gardens where it is cultivated, or at *Venice* where it grows without Care, as I have been informed by a very curious Botaniſt, who reſided there many Years, and conſtantly went to the Spot ſeveral Times in the Seaſon to procure the Seeds, but he aſſured me he never could find any Pods formed on the Plants. The Stalks of this Sort decay in Autumn, and new ones are ſent out from the Roots in the Spring. Theſe riſe about two Feet high, and are garniſhed with oval Leaves placed oppoſite, which are ſmooth; the Flowers grow at the Top of the Stalks in ſmall Umbels, which are ſhaped like thoſe of the former Sorts, but are much larger, ſo that the Sort with purple Flowers makes a pretty Appearance in *July* and *Auguſt*. This Sort will live in the open Air, provided it is planted in a warm Situation, and a dry Soil; for although the Soil in which it grows wild, near *Venice*, is moiſt; yet in this Country the Roots will rot in Winter in wet Ground. The beſt Time to remove and part the Roots is in Spring, juſt before they begin to puſh out new Stalks.

The 4th Sort grows naturally in *Jamaica*, in the *Savannas*, from whence it had the Title of *Savanna* Flower, by which it is chiefly known in that Iſland. This Sort riſes three or four Feet high, having woody Stalks, which ſend out a few lateral Branches; theſe are garniſhed with oval Leaves, placed by Pairs oppoſite, which are ſmooth, and of a ſhining green Colour on their upper Sides, but are pale, and veined underneath; the Flowers are produced from the Side of the Branches, upon long Foot Stalks; there are commonly four or five Buds at the End of each, but there is ſeldom more than one of them which comes to Flower, the others withering ſoon. The Flowers are very large, having a long Tube, which ſpreads open very wide at the Top, they are of a bright Yellow, ſo make a fine Appearance in the Places where the Plants grow naturally, being moſt Part of the Year in Flower. This Plant is too tender to thrive in *England* without the Aſſiſtance of a Stove. It is propagated by Seeds, which muſt be procured from *Jamaica*, for the Plants do not perfect them in *England*; nor are many of the Seeds which are brought from thence good, being either unſkilfully gathered before they were ripe, or being put up moiſt, for few of them have ſucceeded. The Seeds ſhould be ſown in Pots filled with light ſandy Earth, and plunged into a hot Bed of Tanners Bark; if they are good, the Plants will appear in a Month or five Weeks after, when they ſhould be treated in the ſame Manner as other tender Plants from the ſame Country, with this Difference only, to be ſparing in Watering them; for theſe Plants which abound with a milky Juice, require very little Wet, being ſoon deſtroyed by Moiſture. Theſe Plants muſt be conſtantly kept in the Tan Bed in the Stove; and as they advance in Height, will require larger Pots, but there muſt be great Care not to over pot them, for unleſs their Roots are confined, the Plants will not thrive. The ſecond Year the Plants will Flower, if they have been ſkilfully managed, when they will make a fine Appearance in the Stove, the uſual Time of their flowering, in *England*, is in *July* and *Auguſt*, but they retain their Leaves through the Year, which being of a beautiful Green, look very well at all Seaſons.

The 5th Sort was diſcovered by Father *Plumier*, in ſome of the *French* Iſlands in *America*, who made a Drawing of the Plant. It was afterwards found by the late Mr. *Robert Millar*, Surgeon, growing plentifully near *Carthagena*, in *New Spain*, from whence he ſent the Seeds, which ſucceeded in ſeveral Gardens in *England*. This Plant hath twining Stalks, by which it mounts to the Tops of very tall Trees. Theſe are garniſhed with ſtiff, oblong, Heart-ſhaped Leaves, which are ſmooth, and of a ſhining green Colour, being of the ſame Thickneſs with thoſe of the Citron Tree. The Flowers are produced in ſmall Cluſters, from the Side of the Branches, and are of an herbaceous Colour, ſo do not make any great Appearance. Theſe appear in *Auguſt* and *September*, but are not ſucceeded by Pods in this Country.

The 6th Sort grows naturally in *India*, *Zeylon*, and upon the Coaſt of *Guinea*, from whence I have received the Seeds. This Plant riſes with a woody Stem to the Height of five or ſix Feet, dividing into ſeveral Branches, which are garniſhed with oblong pointed Leaves, very ſmooth, and of a ſhining Green above, but pale underneath; theſe are ranged by Pairs oppoſite. From the Wings of the Leaves the Flowers are produced in looſe Bunches. Theſe are ſmall, tubulous, and of a purple Colour, but are never ſucceeded by Pods in this Country. It is a very tender Plant, ſo muſt be conſtantly kept in a hot Houſe, and plunged in the Tan Bed, otherwiſe it will not thrive in *England*; it may be propagated by Cuttings during the Summer Months, but the Cuttings ſhould be laid to dry in the Stove, three or four Days before they are planted, for as the Plants abound with a milky Juice, ſo unleſs the Ends of the Cuttings, where the Wounds are made, are well dried and healed over before they are put into the Ground, they are very ſubject to rot. This Plant muſt be ſparingly watered, eſpecially in Winter, and ſhould be planted in light ſandy Earth.

The 7th Sort grows naturally in *India*. I received Seeds of this from Dr. *Van Royen*, Profeſſor of Botany at *Leyden*, which ſucceeded in the *Chelſea* Garden. This Plant hath a twining Stalk, by which it riſes to a conſiderable Height, and is garniſhed with oblong Leaves, which are much veined. Theſe abound with a milky Juice, which flows out whenever they are broken. This Plant has not yet produced Flowers in *England*. It is tender, ſo requires to be conſtantly preſerved in the Stove, otherwiſe it will not thrive in this Country.

The 8th Sort grows naturally in *Jamaica*, from whence the Seeds were ſent me by the late Dr. *William Houſton*. This hath a climbing Stalk, by which it faſtens to the neighbouring Trees, and riſes ten or twelve Feet high.

The Leaves are oval, ſtiff, and oblique to the Foot Stalk; the Flowers are produced from the Wings of the Leaves. Theſe are of a purpliſh Colour, and have very long Tubes, but ſpread open wide at the Top. This doth not produce Seeds in *England*, nor have I been able to propagate it, either by Layers or Cuttings. It is tender, ſo muſt conſtantly remain in the Stove, and ſhould have little Water.

The 9th Sort hath a climbing woody Stalk, and riſes to a conſiderable Height, by the Support of neighbouring Trees. The Leaves grow by Pairs oppoſite; theſe are oval, ending in a ſharp Point, and have many tranſverſe Nerves from the Midrib. The Flowers come out from the Wings of the Leaves, each ſtanding upon a ſeparate long Foot Stalk, they are large and of a bright yellow Colour, with very long Tubes, and ſpread open wide at the Top; theſe are ſucceeded by long compreſſed Pods, which have Borders on one Side, and are filled with long channeled Seeds, which are crowned with long Plumes of ſoft Down. This Sort grows naturally at *Carthagena* in *New Spain*, from whence I received the Seeds which ſucceeded in the *Chelſea* Garden; it is tender, ſo will not thrive in *England*, unleſs conſtantly preſerved in the Stove. This is propagated by Seeds, which muſt be procured from the Country where it grows naturally, for the Seeds do not ripen in this Country. The Seeds muſt be ſown in Pots, and plunged into a hot Bed, and when the Plants come up, they ſhould be treated in the ſame Manner as directed for the 4th Sort. It flowers in *Auguſt* and *September*, in *England*.

The 10th and 11th Sorts were diſcovered at *La Vera Cruz*, in *New Spain*, by the late Dr. *William Houſton*, who ſent their Seeds to *England*, which ſucceeded in ſeveral Gardens. Theſe Plants have both climbing Stalks, by which they mount to the Tops of the talleſt Trees, where they grow naturally; and in *England* they have ramped over the Plants in the Stoves, and riſen to upward of twenty Feet high. The 10th Sort has produced Flowers in *England* ſeveral Times; but the 11th, which grows more luxuriantly than the other, never had any Appearance of Flowers. Theſe are both propagated by Seeds, which ſhould be ſown as the 4th Sort, and the Plants muſt be treated in the ſame Manner afterward. All theſe Species of Dogſbane abound with a milky Juice, which flows out from any Part of their Stalks or Leaves when they are broken; and this is generally ſuppoſed to be hurtful, if taken inwardly, for it doth not raiſe Bliſters on the Skin, as the Juice of Spurge, and other acrid Plants. The Pods of all the Sorts are filled with Seeds, which are, for the moſt Part compreſſed, and lie over each other *(imbricatim)* like Tiles on a Houſe: Theſe have each a long Plume, of a cottony Down faſtened to their Crowns, by which, when the Pods are ripe and open, the Seeds are wafted by the Wind to a conſiderable Diſtance; ſo that in the Countries where theſe Plants naturally grow, they are ſome of the moſt troubleſome Weeds.

The Down of theſe Plants is in great Eſteem in *France*, for ſtuffing eaſy Chairs, and making Quilts, which are warm and extremely light, ſo are very proper Covering for Perſons afflicted with the Gout, for the Down is ſo extreme light and elaſtic that it occaſions no Weight. This the *French* call *Delawad*, and in the Southern Parts of *France*, where ſome of the Sorts will thrive in the open Air, and perfect their Seeds, there are many Plantations made of theſe Plants for the ſake of the Down.

As many of theſe Sorts grow plentifully in the uncultivated Lands in *Jamaica*, ſo this cottony Down might be eaſily procured from thence in Plenty, and might probably become a vendible Commodity in *England*, which may turn to Advantage, if once it becomes a faſhionable Sort of Furniture, eſpecially as the Plants require no Cultivation, the only Trouble being to collect the Down, which, in ſome of the Sorts, which have large Pods, is produced in great Quantity, ſo may be collected with little Trouble.

The other Sorts which have been ranged under this Genus, are now referred to the following Genera, to which the Reader is deſired to turn, for ſuch of them as are not here enumerated, *viz. Aſclepias*, *Cynanchum*, and *Periploca*.

APPLE TREE. *See* Malus.

APPLES of Love. *See* Lycoperſicon & Solanum.

MAD APPLES. *See* Melongena.

APRICOT, or Abricot. *See* Armeniaca.

AQUIFOLIUM. *See* Ilex.

AQUILEGIA. Columbine.

The *Characters* are,

The Flower hath no Empalement, but is compoſed of five equal oval Petals, which are plain, and ſpread open, within which are five equal Nectariums, ranged alternately with the Petals, each of the Horns widening upward, the Opening being oblique to the Side as it aſcends, and is *faſtened to the Receptacle within, the lower Part lengthening gradually into a long Tube, hanging by a blunt incurved Apex. The Flower hath many Awl-ſhaped Stamina which are crowned by oblong upright Summits. It hath five oval Germen, ſupporting Awl-ſhaped Styles, which are longer than the Stamina, and are crowned by erect Stigma, the Germen afterwards become five cylindrical Veſſels, which ſtand upright, are parallel, pointed, and open in one Cell, which are filled with oval ſhining Seeds.*

The *Species* are,

1. AQUILEGIA *nectariis rectis petalo lanceolato brevioribus. Lin. Sp. Plant.* 533. Columbine with upright Nectariums ſhorter than its Petal, which is Spear-ſhaped. Wild Columbine.

2. AQUILEGIA *nectariis rectis, petalis ovatis longioribus.* Columbine with erect Nectariums, and longer oval Flower Leaves. Mountain Columbine with a large Flower.

3. AQUILEGIA *nectariis incurvis. Hort. Upſal.* Columbine with Nectariums turned inward. Columbine with a double inverted Flower.

4. AQUILEGIA *nectariis rectis ſtaminibus corollâ longioribus. Hort. Upſal*, 153. Columbine with ſtrait Nectariums, and Stamina longer than the Petals. This is the Early dwarf *Canada* Columbine.

The 1ſt Sort is found wild in the Woods in ſome Parts of *England*, I have gathered it in the Woods near *Bexley*, in *Kent*, and between *Maidſtone*, and *Rocheſter*. The Flowers are blue, the Petals ſhort, and the Nectariums very prominent, in which it differs from the 2d, whoſe Petals are longer, and the Nectariums do not riſe ſo high. This I found growing naturally near *Ingleborough Hill*, in *Yorkſhire*. The Flowers are much larger than thoſe of the Garden Columbine, and the Seeds which I ſowed of this in the Garden at *Chelſea*, produced the ſame Species without the leaſt Variation.

The 3d is the Garden Columbine, of which there are great Varieties, not only in the Colour and Fulneſs of their Flowers, but alſo in their Form. In ſome there are no viſible Nectariums, but in place of them a Multiplicity of Petals, ſo that the Flowers are as double as thoſe of the Larkſpur. Theſe are commonly called Roſe Columbines; the Colours of theſe are Cheſnut, Blue, Red, and White, and ſome are finely variegated with two Colours.

There are others with ſharp pointed Petals, which expand in Form of a Star; of theſe there are ſingle and double Flowers, of the ſeveral Colours as the former. From the different Shape of theſe Flowers, any Perſon not well ſkilled in the Culture of Plants, would ſuppoſe they were diſtinct from the others; but having ſeveral Years ſown their Seeds, which were collected with great Care, I have found them always varying from one to the other: Therefore I have not enumerated their Varieties here, knowing they can never be preſerved the ſame from Seeds, however carefully they are ſaved: But as the Sorts with variegated Flowers, are the greateſt Beauties, ſo thoſe Perſons, who are deſirous to have them in Perfection, ſhould root out all thoſe Plants whoſe Flowers are not well marked, or cut off their Stems ſo ſoon as their Flowers appear, leaving only the moſt beautiful to ſeed.

They are all raiſed by ſowing the Seeds, or parting the old Roots, but the former Method is chiefly practiſed; for the old Roots are very apt to degenerate after they have blown two or three Years, and become quite plain.

The Seeds ſhould be ſown in a Nurſery Bed in *September*, for the Seeds which are kept till Spring ſeldom grow well, or at leaſt remain in the Ground a whole Year. In the Spring following your young Plants will appear above Ground, you muſt therefore clear them from Weeds, and if the Seaſon ſhould be dry, refreſh them with Water, that they may gather Strength.

In the Middle or latter End of *May*, theſe Plants will be ſtrong enough to tranſplant; you muſt therefore prepare ſome Beds of good freſh undunged Earth, planting them therein at eight or nine Inches Diſtance every Way, keeping them clear from Weeds, and refreſhing them with a little Water, as they may require it.

At *Michaelmas* you may remove them into the Borders of your Flower Garden, and the *May* following they will produce Flowers; but if you intend to maintain their Roots, you ſhould not ſuffer them to ſeed, but crop off all their Flower Stems as ſoon as the Flowers are paſt.

In order to be ſure of having no ſingle or bad Flowers in your Borders, you may ſuffer them to remain in the Nurſery Beds until they have blown; at which Time you may put a Stick by each Root you fancy to preſerve, or pull out all the ſingle or bad coloured ones, cutting off all the Flowers from your beſt Roots as ſoon as they have ſhewn themſelves, which will greatly add to the preſerving them fair in their Colours; theſe Roots will be ſtrong enough to divide at *Michaelmas*, when you may tranſplant them into your Borders; do not divide them too ſmall, which will weaken their Bloom the ſucceeding Year.

In order to keep up a Succeſſion of good Flowers, you ſhould ſow freſh Seeds every Year; and if you can meet with a Friend, at ſome Diſtance, who is furniſhed with good Flowers of this Kind, it will be very advantageous to both Parties, to exchange Seeds once in two Years, by which Means they will not be ſo apt to degenerate into plain Colours.

In ſaving the Seeds of the variegated Columbines, great Care ſhould be taken not to ſuffer any plain Flowers to remain for Seed, there being generally ſome plain Flowers intermixed with the ſtriped ones on the ſame Plant, and often in the ſame Branches: Theſe ſhould be cut off, for if they are permitted to ſeed, they will degenerate into plain Colours; ſo that there cannot be too much Care taken in ſaving the Seeds, where the Beauty of their Flowers are regarded.

The *Canada* Columbine flowers almoſt a Month before the other Sorts; for which Reaſon it is preſerved in the Gardens of the Curious, though there is no very great Beauty in the Flowers. There is another Variety of this Sort, with taller Flower Stems, which flowers a little after the other, but doth not differ, either in the Shape of its Flowers or Leaves from this, ſo I conclude that they are but one diſtinct Species. The *Canada* Columbines flower in *April*, and their Seeds ripen the Begining of *Auguſt*. The other Sorts flower toward the End of *May*, and in cool Seaſons will continue to produce Flowers till the Middle of *July*, and their Seeds ripen toward the Middle or End of *September*, according as the Seaſon proves more or leſs favourable.

The firſt Sort is that which is directed for medicinal

Uſe in the Diſpenſatories, but at preſent is very rarely ordered.

ARABIS. *Lin. G. P.* 732. Baſtard Tower Muſtard.

The *Characters* are,

The Flower hath a four leaved Empalement, two of the oppoſite Leaves being large, and the other two narrow, theſe fall off. The Flower hath four Petals in Form of a Croſs, which ſpread open; at the Bottom of each is ſituated a reflexed Nectarium fixed to the Empalement, and between theſe ariſe ſix upright Stamina, two of which are no longer than the Flower Cup, the other four are much longer: Theſe are crowned with Heart-ſhaped Summits. In the Center is ſituated a taper Germen, which is as long as the Stamina, having no Style, but the obtuſe Stigma reſts upon it. This afterward becomes a narrow long compreſſed Pod opening Lengthways, having two Valves and a thin Partition, between which is lodged a Row of flat Seeds.

The *Species* are,

1. ARABIS *foliis petiolatis lanceolatis integerrimis. Vir. Cliff.* 64. Baſtard Tower Muſtard, with whole Spear-ſhaped Leaves having Foot Stalks.

2. ARABIS *foliis amplexicaulibus dentatis. H. C.* Baſtard Tower Muſtard, with indented Leaves embracing the Stalks. Perennial white Gilliflower of the Spring.

3. ARABIS *foliis amplexicaulibus ſiliquis ancipitibus linearibus calycibus ſubpiloſis. Hort. Up.* 191. Baſtard Tower Muſtard with Leaves embracing the Stalks, narrow Pods hanging two Ways, and hairy Flower Cups. Broad leaved hairy Tower Muſtard, with hanging Pods.

4. ARABIS *foliis amplexicaulibus ſiliquis decurvis planis linearibus, calycibus ſubrugoſis. H. U.* Baſtard Tower Muſtard, with narrow plain hanging Pods and rough Flower Cups. Stock Gilliflower with a Leaf of Dame's Violet.

The firſt Sort is a low Plant, which ſeldom riſes more than four or five Inches high, ſending out many ſhort Branches on every Side; theſe have ſmall white Flowers growing alternately the moſt Part of their Length, which have each four Petals in Form of a Croſs, and are ſucceeded by long ſlender Pods filled with ſmall round Seeds. It grows naturally on ſandy dry Ground, in many Parts of *England*. In *Engliſh* it is titled Codded Mouſe-ear.

The ſecond Sort grows naturally in *Iſtria*, from whence I received the Seeds; it alſo is a Native of the *Alps*, and other mountainous Countries. This is a perennial Plant, which increaſes very faſt by its creeping Roots, which run obliquely near the Surface of the Ground, and ſend down Roots at every Joint. The Leaves are collected into Heads, ſpreading circularly like thoſe of the *London* Pride. Theſe are oblong, whitiſh, and indented on their Edges; out of theſe Heads ariſe the Flower Stalks, which grow near a Foot high, and are garniſhed with Leaves placed alternately, which are broader at their Baſe than thoſe which grow below, and cloſely embrace the Stalks: The Flowers grow in looſe Bunches on the Top; theſe are white, and have Leaves in Form of a Croſs, which are ſucceeded by long flat Pods, opening lengthways, having two Cells, which are ſeparated by an intermediate Partition, each having one Row of flat reddiſh Seeds.

This is a very hardy Plant, ſo will thrive in any Situation. It produces Seeds in Plenty, but as it multiplies ſo faſt by its creeping Roots, ſo few Perſons are at the Trouble to ſow the Seeds. It flowers early in the Spring, and having many Stalks riſing from one Root, they make a pretty Variety in cold Situations, where many finer Plants will not thrive, ſo may have Place in rural Plantations among Shrubs, where they will thrive with very little Care.

The third Sort grows naturally in *Siberia*, from whence the Seeds were brought to *Peterſburgh*, and ſown in the Imperial Garden. This is a perennial Plant, which grows near a Foot high; the Leaves are broad, hairy, and indented on their Edges; theſe cloſely embrace the Stalks. The Flowers grow alternately in looſe Spikes, and are of a dirty white Colour. Theſe are ſucceeded by long narrow Pods, which are filled with flat brown Seeds like the former, but the Pods of this hang downwards two Ways. This is a biennial Plant, which is very hardy, ſo will thrive in any Situation. It flowers early in Spring, and perfects Seeds very well, by which it may be propagated in Plenty.

The fourth Sort grows naturally in *Hungary*, *Sicily*, and *France*. I have alſo found it growing wild upon ſome old Walls at *Cambridge* and *Ely*, but the Seeds might probably come out of the Gardens where they were firſt planted. The Plants of this Kind, which grow on Walls or Ruins, continue much longer than thoſe which are ſown in Gardens, where they ſeldom live above two Years. The Leaves of this Sort are long, broad, hairy, and a little waved on their Edges; they are of a pale Colour, and ſpread near the Ground: From the Center of theſe comes out the Stalks, which riſe about a Foot and a Half high, having ſeveral Leaves growing alternately, which cloſely embrace them. Toward the Top of the Stalks, they divide into ſeveral ſmall Branches, which are terminated by long looſe Spikes of Flowers of a dirty white Colour, each having four Petals placed in Form of a Croſs. After the Flowers are paſt, the Germen becomes long flat Pods, which turn backward at their Extremity and open lengthways, having two Rows of flat bordered Seeds of a dark brown Colour, and ſeparated by a thin Partition.

This Sort is eaſily propagated by Seed, which ſhould be ſown in Autumn; for thoſe which are ſown in Spring frequently miſcarry, or lie in the Ground a whole Year before they grow. When the Plants are ſtrong enough to remove, they may be tranſplanted into a ſhady Border, or in rural Plantations, where no other Care will be neceſſary, but to prevent their being overgrown by Weeds. It flowers in *May*, and the Seeds ripen in *July*. There is little Beauty in this Plant, yet many Perſons preſerve it in their Gardens to make a Variety.

ARACHIS, Earth, or Ground Nut.

The *Characters* are,

The Empalement of the Flower opens in two Parts, the upper being cut into three at the Extremity, the under one is hollow ending in a Point, and longer than the other. The Flower is of the Butterfly Kind, having four Petals; the Standard is large, roundiſh, and plain; the Wings are open and ſhorter than the Standard, the Keel is little longer than the Empalement, and turns back. The Flower hath ten Stamina, nine of which coaleſce, and the upper one ſtands off; theſe are no longer than the Keel, and are crowned by round Summits. In the Center is ſituated an oblong Germen, ſupporting an Awl-ſhaped Style, crowned by a ſingle Stigma. The Germen afterward turns to an oblong Pod, containing two or three oblong blunt Seeds.

We have but one *Species* of this Plant, *viz.*

Arachis. *Lin. Hort. Cliff.* Earth or Ground Nut. The native Country of this Plant I believe is *Africa*, though at preſent, all the Settlements in *America* abound with it; but many Perſons who have reſided in that Country affirm, they were originally brought by the Slaves from *Africa* there, where they have been ſpread all over the Settlements.

It multiplies very faſt in a warm Country, but being impatient of Cold, it cannot be propagated in the open Air in *England*; therefore whoever has an Inclination to cultivate this Plant, muſt ſow the Seeds in a hot Bed in the Spring of the Year, keeping it covered with Glaſſes till the Middle or End of *June*; after which, if the Weather proves warm, they may be expoſed to the open Air by Degrees. The Branches trail upon the Ground, and the Flowers (which are yellow) are produced ſingle upon long Foot Stalks; as ſoon as the Flower begins to decay, the Germen is thruſt under Ground, where the Pod is formed and ripened; ſo that unleſs the Ground is opened, they never appear: The Negroes kept this a Secret among themſelves, therefore could ſupply themſelves with theſe Nuts unknown to their Maſters. The Roots of theſe Plants are annual, but the Nuts or Seeds ſufficiently ſtock the Ground in a warm Country, where they are not very carefully taken up. In *South Carolina* there is great Plenty of them, which the Inhabitants roaſt, and uſe as Chocolate.

ARALIA, Berry-bearing Angelica.

The *Characters* are,

It is an umbelliferous Plant with a globular Umbel, having a ſmall Involucrum; the Empalement of the Flower is ſmall, indented in five Parts, and reſts upon the Germen. The Flower hath five oval Petals, which are reflexed; it hath five Awl-ſhaped Stamina crowned by roundiſh Summits; the round Germen below the Empalement ſupports five ſhort Styles, each of which is crowned by a ſingle Stigma. The Germen afterward turns to a roundiſh channeled Berry, having five Cells, each containing one oblong hard Seed.

The *Species* are,

1. Aralia *caule folioſo herbaceo lævi. Hort. Upſal.* 70. Berry-bearing Angelica, with an herbaceous leafy Stalk which is ſmooth. *Canada* Berry-bearing Angelica.
2. Aralia *caule nudo. Hort. Cliff.* 113. Berry-bearing Angelica, with a naked Stalk and creeping Root.
3. Aralia *arboreſcens caule folioliſque aculeata. Vir. Cliff.* 26. Tree Berry-bearing woody Angelica, whoſe Stalk and Leaves are prickly. Angelica Tree, *vulgò*.

The firſt Sort is pretty common in many Gardens near *London*, but the ſecond is more rare. Both theſe Plants grow naturally in *North America*, from whence their Seeds were brought to *Europe*. They are perennial Plants, whoſe Stalks decay in Autumn, and new ones ariſe from their Roots in the Spring. The firſt grows about three Feet high, and divides into many irregular Branches, which are garniſhed with ramoſe Leaves, placed alternately; at the Wings of theſe the Flower Stalks are produced, which are terminated by round Umbels of ſmall four leaved Flowers, of a whitiſh Colour; theſe are ſucceeded by round channeled Berries, which when ripe, are black. This Plant flowers in *June*, and the Seeds ripen in *October*.

The ſecond Sort riſes to near the ſame Height as the former; the Leaves of this divide into two or three Parts, each ending with three or five large Lobes, which are ſawed on their Edges. The Flower Stalks ariſe between theſe immediately from the Root, being naked, and are terminated by round Umbels of Flowers, in Shape and Colour like the firſt; theſe are ſucceeded by Berries, which are ſmaller than thoſe of the other. This flowers toward the End of *June*, and the Seeds ripen late in the Autumn. The Roots were formerly brought over and ſold for Sarſaparilla, and at this Time ſeveral of the Inhabitants of *Canada* make Uſe of it as ſuch, but it is very different from the true Sort.

Both theſe Sorts are eaſily propagated by Seeds, which are generally produced in Plenty. Theſe ſhould be ſown in Autumn ſoon after they are ripe, for thoſe ſown in Spring, never grow the ſame Year, ſo that a whole Seaſon is gained by ſowing in Autumn. When the Plants appear, they muſt be kept clean from Weeds during the Summer; and in the Autumn following, when their Leaves decay, the Roots may be taken up, and tranſplanted where they are to remain. They are very hardy, ſo may be planted in any Situation; and as they grow naturally in Woods, ſo they may be planted in Wilderneſs Quarters, under Trees, where, although they have no great Beauty, yet they will add to the Variety.

They may alſo be propagated by parting their Roots; the beſt Time for doing this is in Autumn, ſoon after their Leaves decay. Theſe ſhould be planted pretty far aſunder, for their Roots ſpread to a conſiderable Diſtance, where left undiſturbed for ſome Years.

The third Sort riſes with a woody Stem to the Height of eight or ten Feet, dividing into ſeveral Branches; theſe are garniſhed with branching Leaves, which are compounded of many divaricated Wings, the Lobes of which are oblong, and the Ribs of the Leaves, as alſo the Branches and Stems of the Plants, are armed with ſtrong crooked Spines, which renders the Places very difficult to paſs through where they grow in Plenty. The Flowers are produced in large looſe Umbels, at the Extremity of the Branches, and are of an herbaceous Colour, ſo make no great Figure, but the Plants are preſerved in moſt of the curious Gardens in *England*. It flowers in *Auguſt*, but the Seeds do not ripen in this Country.

This is propagated by Seeds, which are eaſily procured from *North America*; but as they ſeldom arrive here till toward the Spring, ſo the Plants never come up the firſt Year: Therefore when the Seeds arrive, they ſhould be ſown in Pots, filled with light Earth, and placed in a ſhady Situation, where they may remain until the next Autumn, being careful to weed the Pots conſtantly; otherwiſe if Weeds are permitted to grow till they are large, they cannot be taken out, without drawing up the Seeds with their Roots. In Autumn, the Pots ſhould be plunged into an old Bed of Tan, or in a warm Border under the Shelter of a Hedge or Wall; and if the Winter proves ſevere, it will be proper to cover the Pots with Straw or Peaſehaulm, to prevent the Froſt from penetrating deep into the Ground. In *March* the Pots ſhould be plunged into a moderate hot Bed, which will bring up the Plants early, ſo that they will have more Time to get Strength before the following Winter. When the Plants come up, they ſhould be frequently refreſhed with Water, and conſtantly kept clean from Weeds: In *May* they ſhould be inured to the open Air, and when they are removed out of the Bed, ſhould have a ſhady Situation. Theſe Plants ſhould not be diſturbed the firſt Seaſon, but as they are often injured by Froſt when young, ſo in *October* the Pots ſhould be placed under a Frame, where they may be ſcreened from hard Froſts, but in mild Weather ſhould be conſtantly opened to enjoy the free Air. The Leaves of theſe Plants fall away in the Autumn, ſo that ſome Perſons have ſuppoſed them dead, and have thrown them out of the Pots, which every one ſhould be cautioned againſt. In the Spring, before the Plants begin to puſh, they ſhould be carefully ſhaken out of the Pots, and ſeparated; Part of them ſhould be planted ſingly into ſmall Pots, and the others may be planted in a Bed of light Earth in a warm Situation. If thoſe which are planted in the ſmall Pots are plunged in a moderate hot Bed, it will greatly forward their Growth; but they muſt be early inured to bear the open Air, otherwiſe they will draw up weak. The following Summer they muſt have a ſhady Situation, and the next Winter ſhould be ſheltered again; the Spring following they may be ſhaken out of the Pots, and planted where they are deſigned to remain. Thoſe Plants which were planted in the Bed, will require Protection from the Froſt the firſt Winter; therefore if the Surface of the Ground is covered with old Tanners Bark, it will prevent the Froſt from penetrating to their Roots; and if in hard Froſts, ſome Straw, Peaſe-haulm, or any light Covering is laid over the Bed, it will ſecure their Stems from being injured. The Plants in the Bed may remain there two Years, by which Time they will be ſtrong enough to tranſplant to the Places where they are deſigned to grow. As theſe Plants do not come out very early in the Spring, ſo they often continue growing late in the Autumn, which cauſes the extreme Parts of their Shoots to be very tender, whereby they often ſuffer from the early Froſts in Autumn, which kill the upper Parts of the Shoots; but as their woody Stems are ſeldom injured, ſo they put out new Branches below: And if in very ſevere Winters the Stems are deſtroyed, yet the Roots will remain, and put out new ones the following Summer, therefore they ſhould not be deſtroyed.

This Plant may alſo be propagated by its Roots, for as they ſpread far in the Ground, ſo if they are laid open, and ſome of the ſtrongeſt are ſeparated from the Plant and left in the Ground, they will put out Stems and make new Plants. Or if Part of the Roots are taken off and planted on a moderate hot Bed, they will puſh out Stems in Plenty, ſo may be increaſed with Eaſe.

ARBOR CAMPHORIFERA. *See* Laurus.

ARBOR CORAL. *See* Erythrina.

ARBOR JUDÆ. *See* Cercis.

ARBUTUS, the Strawberry Tree.

The *Characters* are,

The Flower hath a ſmall obtuſe permanent Empalement, which is cut into five Parts, upon which the Germen ſits. The Flower is of one Leaf, ſhaped like a Pitcher, and divided into five Parts at the Brim, which turn backward. It hath ten ſhort Stamina, which are joined at the Bottom to the Flower Leaf; theſe are crowned with bifid Summits. At the Bottom of the Flower is ſituated the globular Germen, ſupporting a cylindrical Style, crowned by a thick blunt Stigma. After the Flower is paſt, the Germen becomes an oval or round Berry, having five Cells, which are filled with hard Seeds.

The *Species* are,

1. ARBUTUS *foliis glabris ſerratis, baccis polyſpermis, caule erecto arboreo.* Strawberry Tree with ſmooth ſawed Leaves, Berries having many Seeds, and an upright Trunk. The Common Strawberry Tree.

2. ARBUTUS *foliis glabris integerrimis, baccis polyſpermis caule erecto arboreo.* Strawberry Tree with ſmooth entire Leaves, Berries full of Seeds, and an erect woody Stem. Oriental Strawberry Tree, called *Adrachne.*

3. ARBUTUS *caulibus procumbentibus foliis ovatis ſubſerratis floribus ſparſis baccis polyſpermis. Lin. Sp. Plant.* 395. *Arbutus* with trailing Stalks, oval Leaves, ſomewhat indented, Flowers growing looſely, and many Seeds. Bilberry of *Acadia,* with the *Alaternus* Leaf.

4. ARBUTUS *caulibus procumbentibus foliis rugoſis ſerratis. Flor. Lap.* 161. *Arbutus* with trailing Stalks and rough ſawed Leaves. Bilberry with oblong whitiſh Leaves.

5. ARBUTUS *caulibus procumbentibus foliis integerrimis. Flor. Lap.* 162. *Arbutus* with trailing Stalks and entire Leaves. This is the *Uva urſi. Cluſ.* Bearberries.

The firſt Sort grows naturally in *Italy, Spain,* and *Ireland*; this is now very common in the *Engliſh* Gardens. Of this Sort there are the following Varieties, *viz.* one with an oblong Flower and oval Fruit; another with a double Flower, and a third with red Flowers; but theſe being only ſeminal Varieties, I have not mentioned them as Species.

The ſecond Sort grows naturally in the Eaſt, particularly about *Magneſia,* where it is ſo plenty, as to be the principal Fuel uſed by the Inhabitants of the Country. This grows to a middle ſized Tree, the Branches are irregular, and are garniſhed with large oval Leaves, ſomewhat like thoſe of the Bay Tree, but not quite ſo long; theſe are ſmooth and entire, having no Serratures on their Edges; the Flowers are ſhaped like thoſe of the common *Arbutus,* but grow thinly on their Branches. The Fruit is oval, and of the ſame Colour and Conſiſtence with the common Sort, but the Seeds of this are flat, whereas thoſe of the common Sort are pointed and angular.

The common Strawberry Tree is too well known to require any Deſcription here, being at preſent in moſt of the *Engliſh* Gardens; it is one of the greateſt Ornaments to them in the Months of *October, November,* and great Part of *December*; that is the Seaſon when the Trees are in flower, and the Fruit of the former Year is ripe, being a whole Year growing to Perfection; for the Fruit which is produced from the Flowers of one Year, do not ripen till the Bloſſoms for the ſucceeding Year are fully blown: When there is Plenty of Fruit and Flowers upon the Trees, they make a fine Appearance, at a Seaſon when moſt other Trees are paſt their Beauty.

Thoſe Trees which have large oval Fruit, make the greateſt Figure, the Flowers being larger, and oblong. The Sort with double Flowers is a Curioſity, but as the Flowers have only two Orders of Leaves, they make no great Appearance; nor do the Trees produce Fruit in any Plenty, therefore the other is preferable. The Sort with red Flowers makes a pretty Variety, when intermixed with the other; the Outſide of them are of a fine red Colour at their firſt Appearance, and afterward they change to purple before they fall off. The Fruit of this is the ſame with the common Sort. All theſe Varieties are preſerved, by inarching or grafting them upon the common *Arbutus*, for the Seeds of either do not produce the ſame Kind; though from the Seeds of the oval Fruit, there is more of the ſame produced, than from the Seeds of the common Sort.

The beſt Method to propagate the *Arbutus* is from Seeds. When the Fruit is perfectly ripe, it ſhould be gathered and mixed with dry Sand, to preſerve them till the Middle or latter End of *February*, which is a proper Seaſon for ſowing ſome of the Seeds, in order to have ſtrong Plants before Winter; thoſe which are put in at this Time, muſt be ſown in Pots, and ſhould be plunged into a moderate hot Bed, which will greatly forward their Vegetation; for the Plants will appear in *April*, and if properly managed, will grow eight or ten Inches high before Winter. In order to which, they muſt be frequently refreſhed with Water, and kept very clean from Weeds; when the Summer advances, if the Pots are plunged into an old Tan Bed, it will preſerve the Earth in the Pots from drying too faſt; but this Bed ſhould be made in a Situation, where the Plants will be ſcreened from the Sun in the Heat of the Day, or ſhaded with Mats during the Heat. The Beginning of *October*, theſe Plants may be ſhaken out of the Pots, and their Roots carefully ſeparated, planting them ſingly in ſmall Pots filled with light Earth; then plunge the Pots into an old Bed of Tanner's Bark, under a common Frame, obſerving to ſhade them from the Sun in the Middle of the Day, and give them Water as they may require: In this Bed the Pots ſhould remain during the Winter, obſerving to expoſe the Plants to the open Air, at all Times when the Weather is favourable, but in froſty Weather they muſt be covered, or they will be in Danger if the Seaſon proves ſevere. The Spring following, the Plants may be removed to a very gentle hot Bed, which will require no other Covering but Mats. This will enable them to make ſtrong Shoots early in the Summer, whereby they will be in a better Condition to bear the Cold of the ſucceeding Winter: In this Bed the Plants may continue moſt Part of the Summer, for if the Pots are taken out and ſet upon the Ground, the Smallneſs of their Size will occaſion the Earth in them to dry ſo faſt, that Watering will ſcarcely preſerve your Trees alive; but if they are kept growing all the Summer, they will be near two Feet high by the next Autumn: It will be adviſable to ſcreen them from the Froſt during their Continuance in Pots, by plunging them into the Ground in a warm Place, and covering them with Mats in bad Weather.

When your Trees are grown to three or four Feet high, ſhake them out of the Pots into the open Ground in the Places where they are to remain; this ſhould be done in *April*, that they may take good Root before the Winter, which might damage them if newly planted.

There are ſome Perſons who propagate the *Arbutus* by Cuttings and Layers, but this is a tedious and uncertain Method; for thoſe Branches which take Root, are generally two Years before they can be taken from the Plant; nor do many of them ever put out Roots when they are laid, eſpecially if the Shoots which are laid down are not very young; and few of the Cuttings will take Root, ſo it is not worth practiſing, eſpecially as the Plants ſo propagated never grow tall, but put out lateral Branches near the Ground, whereby they become very buſhy, and are more like a Shrub than a Tree: Whereas thoſe which are raiſed from Seeds, may be trained up to have fine Stems, ſo will make a much better Appearance.

Theſe Trees are tolerably hardy, and are ſeldom hurt, except in extreme hard Winters, which many Times kill the young and tender Branches, but rarely deſtroy the Trees; therefore, however dead your Trees may appear after a hard Winter, yet I would adviſe you to let them remain till the ſucceeding Summer has ſufficiently demonſtrated what are living and what are dead; for the Winters *Anno* 1728-9, and 1739-40, gave us great Reaſon to believe moſt of the Trees of this Kind were deſtroyed; and ſome were ſo haſty, as to dig up or cut down, many of their Trees; but all thoſe who had Patience to let them remain, found that ſcarce one in five hundred failed to come out again the next Summer, and made handſome Plants that Seaſon.

This Tree delights in a moiſt Soil, for when they are planted in dry Ground, they ſeldom produce much Fruit: The Flowers of this Tree being produced in Autumn, if the Winter proves ſevere, are generally deſtroyed, which has occaſioned their producing very little Fruit in *England* for ſeveral Years: Therefore, in order to obtain Fruit, the Trees ſhould be placed in a warm Situation; and where the Ground is not naturally moiſt, there ſhould be a good Quantity of Loam and rotten Neat's Dung laid about their Roots; and if the Spring ſhould prove dry, they muſt be plentifully watered, in order to have Plenty of Fruit.

The very beſt Seaſon for tranſplanting the *Arbutus* is in *September*, at which Time the Bloſſoms are beginning to appear; and at that Seaſon, if it ſhould prove very dry and they are kept moiſt, they will take Root very ſoon; at the end of *October*, their Roots ſhould be well covered with Mulch, to keep out the Froſt.

The 3d Sort grows naturally in *Acadia*, and other Northern Parts of *America*, upon ſwampy Land, which is frequently overflowed with Water; this is a low buſhy Shrub, with ſlender trailing Branches, which are garniſhed with oval Leaves, a little ſawed on their Edges; the Flowers come out from the Wings of the Leaves, growing in thin looſe Bunches. The Fruit of this Sort is never produced in *England*, and it is with great Difficulty the Plants are kept alive here.

The 4th Sort grows naturally on the *Alps* and the *Helvetian* Mountains, alſo in *Lapland* and *Siberia*. This never riſes high, but ſends out from the Roots many ſlender Branches, which trail upon the Ground; theſe are garniſhed with oblong rough Leaves, of a pale green Colour; the Flowers are produced from the Wings of the Leaves, upon long ſlender Foot Stalks; theſe are ſucceeded by Berries about the Size of the common black Cherry, which are firſt green, afterward red, and when ripe they are black. Theſe are of a pleaſant Taſte, ſo are frequently eaten by the Inhabitants of thoſe Countries where they grow naturally. This is alſo a very difficult Plant to keep alive in Gardens, for it is an Inhabitant of Bogs, growing among Moſs where the Ground is never dry.

The 5th Sort grows naturally upon the Mountains in *Spain*, and the Northern Parts of *Europe* and *America*. This riſes little more than a Foot high, dividing into many Branches, which are cloſely garniſhed with ſmooth thick Leaves of an oval Form, and placed alternately;

the Flowers are produced in ſmall Bunches toward the Extremity of the Branches, which are ſhaped like thoſe of the common Sort, but ſmaller ; and are ſucceeded by Berries, of the ſame Size with thoſe of the former Sort, which are red when ripe.

There are few of theſe Plants in the *Engliſh* Gardens, for as they are Inhabitants of very cold Countries, covered with Snow all Winter, and growing upon Bogs, among Moſs, ſo when they are brought into a Garden, they ſeldom continue long, nor do they thrive with the utmoſt Care ; in Places where artificial Bogs have been contrived to receive theſe Plants, they have been preſerved two or three Years, and then have periſhed ; ſo that unleſs the Place where they are planted is naturally boggy, there is little Hopes of their ſucceeding long.

The *Andrachne* is at preſent very rare in *England*; this may be propagated the ſame Way as hath been directed for the common *Arbutus*, but as there are no Plants in this Country which produce Fruit, the Seeds muſt be procured from the *Levant*, where they may be had in Plenty. As the Leaves of this Tree are larger than thoſe of the common *Arbutus*, the Trees make a finer Appearance, and deſerve our Care to cultivate them, eſpecially as the bear the open Air, when the Plants are become woody ; for when young, they are impatient of much Froſt ; therefore they ſhould be preſerved in Pots three or four Years, till they have obtained Strength, and may then be planted in a warm Situation and on a dry Soil, for they will not thrive in wet Ground.

ARCTIUM. *Lin. Gen.* 830. Burdock.

The *Characters* are,

The Empalement of the Flower is ſcaly, each ending in a long Thorn which is reflexed at the Point. The Flower is compoſed of many Florets, which are tubulous and uniform ; theſe are of one Leaf. The Tube is long and ſlender, and cut into five narrow Segments at the Top : Theſe have five ſhort ſlender Stamina, which are crowned by cylindrical Summits. The Germen is ſituated at the Bottom of the Tube, having a hairy Tip, ſupporting a long ſlender Style, crowned by a bifid reflexed Stigma; the Germen afterward becomes a ſingle pyramidal angular Seed, crowned with Down.

The *Species* are,

1. ARCTIUM *foliis cordatis inermibus petiolatis capitulis majoribus ſparſis.* Burdock with Heart-ſhaped Leaves, without Prickles, having Foot Stalks, and large Heads growing ſcatteringly.

2. ARCTIUM *foliis cordatis inermibus, capitulis minoribus compactis.* Burdock with heart-ſhaped Leaves without Spines, and ſmall Heads cloſe together.

3. ARCTIUM *foliis cordatis inermibus, capitulis majoribus tomento-reticulatis.* Burdock with Heart-ſhaped Leaves, without Spines, and larger woolly netted Heads.

The two 1ſt Sorts are common Weeds, growing on the Sides of Roads and Foot Paths in moſt Parts of *England*, ſo are not admitted into Gardens. The 1ſt is ordered for medicinal Uſe by the College of Phyſicians, therefore I have inſerted it here : The 2d is by many ſuppoſed to be only a Variety of the 1ſt, but I have for ſeveral Years ſown the Seeds of both Sorts in the *Chelſea* Garden, where they have conſtantly retained their Difference.

The 3d Sort is not a Native of *England*, but grows naturally on the *Apennine* Mountains, The Leaves are like thoſe of the common Sort, but whiter on their under Side: the Heads are more compact, and the Florets of a bright red Colour ; but the greateſt Difference is in their Heads, which in this Sort are beautifully netted with a fine Down all over. This is alſo ſuppoſed to be only a Variety of the common Sort, but I have cultivated it above thirty Years, during which Time it has never varied, ſo that it is certainly a diſtinct Species.

As theſe Plants are ſeldom admitted into Gardens, it is needleſs to ſay any Thing of their Culture ; but where they are troubleſome Weeds, it may not be amiſs to mention, that their Roots laſt but two Years, ſo they may be deſtroyed with little Trouble ; if they are cut up before they ſeed, in two or three Years they may be entirely rooted out ; for the Plants which come up from Seed, do not flower till the ſecond Year, and when the Seeds are perfected their Roots decay.

ARCOTIS. This hath been uſually known under the Title of *Anemonoſpermos*, from the Reſemblance the Seeds of theſe Plants have to that of the *Anemone.* We have no *Engliſh* Name for this Plant.

The *Characters* are,

The common Empalement is roundiſh and ſcaly, thoſe on the lower Part are looſe and ſilvery, the upper are oval and concave. The Flower is compoſed of many female Flowers which are ranged round the Border ; theſe have one Side ſtretched out like a Tongue, which are called the Rays ; and have an oval four cornered Germen ſituated in their Center, which is crowned with Down, ſupporting a ſlender Style, crowned by two oval Stigma ; the Germen afterward becomes a ſingle roundiſh Seed, covered with a ſoft Down. The Middle or Diſk of the Flower is compoſed of hermaphrodite Florets, which are Funnel-ſhaped, and divided at the Top into five Parts, which are reflexed ; theſe have five Stamina, crowned by ſhort Summits ; in the Center is placed a ſmall Germen, ſupporting a cylindrical Style with a ſingle Stigma. Theſe Flowers are abortive.

The *Species* are,

1. ARCTOTIS *foliis pinnatis, caule herbaceo, petalis radii profundè trifidis. Flor. Leyd.* 179. *Arctotis* with an herbaceous Stalk, winged Leaves, and the Rays of the Flowers deeply cut into three Parts. *African Anemonoſpermos* with hoary Dandelion Leaves.

2. ARCTOTIS *foliis lanceolato-linearibus integris denticulatis. Lin. Hort. Cliff.* 412. *Arctotis* with narrow Spear-ſhaped Leaves, which are indented on the Sides. *African Anemonoſpermos* with a ſtiff ſawed Leaf, and a Flower of a Brimſtone Colour within, and purple without.

3. ARCTOTIS *foliis pinnato-ſinuatis, laciniis oblongis dentatis. Lin. Hort. Cliff.* 412. *Arctotis* with ſinuated winged Leaves, with long Indentures, and a beautiful Orange-coloured Flower.

4. ARCTOTIS *foliis ovatis dentatis, petiolis longiſſimis, ſupernè dentatis, caule ramoſo. Lin. Hort. Cliff.* 412. *Arctotis* with oval indented Leaves, with long Foot Stalks, whoſe upper Side is indented, and a branching Stalk. *African Anemonoſpermos* with Sea Rag wort Leaves, and a Sulphur-coloured Flower.

5. ARCTOTIS *ramis decumbentibus foliis lineari-lanceolatis rigidis ſubtus argenteis flore magno aureo pediculo longiſſimo. Fig. Pl. Tab.* 49. *Arctotis* with trailing Branches, narrow, ſtiff, Spear-ſhaped Leaves, white on their under Side, a large golden Flower, and a very long Foot Stalk.

6. ARCTOTIS *foliis pinnato-ſinuatis ſubtus argenteis ſeſſilibus, flore magno aurantio. Arctotis* with ſinuated winged Leaves, lying cloſe to the Stalk, white on their under Side, and a large Orange-coloured Flower.

7. ARCTOTIS *foliis cordatis nervoſis marginibus crenatis petiolis longiſſimis. Arctotis* with nervous Heart-ſhaped Leaves, whoſe Edges are indented, and very long Foot Stalks. *African Anemonoſpermos* with a Plantain Leaf, and a Sulphur-coloured Flower.

8. ARCTOTIS *foliis pinnato-laciniatis criſpis caule ramoſo fruticoſo. Arctotis* with winged jagged Leaves, which are curled, and a branching Shrubby Stalk. *African Anemonoſpermos* with Leaves like the Bleſſed Thiſtle, and the Inſide of the Rays white.

Theſe Plants are Natives of the Country about the *Cape of Good Hope*, from whence they have been brought to ſome curious Gardens in *Holland*; where there are ſeveral other Species not yet in the *Engliſh* Gardens.

The 1ſt Sort is an annual Plant, which ſhould be ſown upon a moderate hot-Bed, toward the End of *March*; when the Plants are fit to tranſplant, they ſhould be each put into a ſingle Pot, and as ſoon as they are well rooted, they muſt by Degrees be inured to the open Air, into which they ſhould be placed as ſoon as the Weather is warm, and will require much Water in dry Weather; for their Roots ſoon fill the Pots, and ſtrike into the Ground, if they ſtand long unremoved. This Plant may alſo be ſown upon a warm Border of light Earth in the open Air in the Middle of *April*, where they are deſigned to remain; theſe will flower in *Auguſt*, and if the Seaſon proves favourable, will perfect Seeds very well, and theſe Plants will grow much ſtronger than thoſe raiſed upon the hot Bed; but as in cold Seaſons they will fail to perfect their Seeds, it will be a ſecure Method to raiſe ſome upon the hot Bed, which never fails to perfect Seeds, provided they are not treated too tenderly.

The 5th, 6th, and 7th Sorts are low Plants, ſeldom riſing in Stem above four or five Inches, their Leaves ſpreading near the Surface of the Ground; the Flowers are produced from ſingle Foot Stalks riſing from the Center of the Plants; theſe flower in *April* or *May*, and make a fine Appearance; but ſeldom perfect their Seeds in *England*; therefore are propagated by Cuttings; but as they are Plants of ſmall Growth, they do not increaſe very faſt here. The beſt Way to obtain Good Seeds of theſe Plants is to expoſe them to the open Air when in Flower; for if they are drawn weak by being kept in the Houſe, they never produce good Seeds.

The 2d, 3d, 4th, and 8th Sorts, grow to the Height of four or five Feet, and the 8th, ſometimes to ſix or ſeven, ſending forth many Branches; therefore will require to be frequently pruned, to keep them in tolerable Order, eſpecially the 8th, which ſends forth ſtrong rambling Shoots, when their Roots are not too much confined in the Pots, but more ſo when they are duly watered: Theſe four Sorts are ſeldom deſtitute of Flowers the whole Year, unleſs the Winter is very ſevere; this renders them more valuable than thoſe which flower at one Seaſon only, though the flowers of the latter are more beautiful; for all thoſe Plants which flower in the Winter Seaſon, make a fine Variety in the Green-houſe; and when the Plants are ſet abroad in Summer, their Flowers being at that Seaſon produced in greater Plenty, they add to the Beauty of a Garden.

The firſt Sort, being an annual Plant, doth not flower till *July*, but there will be a Succeſſion of Flowers upon the Plants till the Froſt puts a Stop to them.

The 5th and 6th Sorts flower in *May* and *June*, theſe have very large beautiful Flowers, eſpecially the 5th, whoſe Bottom is finely chequered with black and white, and the Rays being of a deep Gold Colour, are ſet off by the other Colours. This Plant is eaſily propagated by Cuttings; but the 6th Sort never ſends out any Branches ſo it is difficult to propagate in this Country, where it ſeldom produces Seeds.

The ſhrubby Sorts are propagated by planting Cuttings in a Bed of light freſh Earth, in any of the Summer Months, obſerving to ſhade them from the Heat of the Sun until they have taken Root, as alſo to refreſh them often with Water; in ſix Weeks or two Months after planting, they will be rooted ſufficiently, when you ſhould tranſplant them into Pots filled with the like freſh Earth, ſetting the Pots in a ſhady Place until the Plants are ſettled in their new Earth, after which you ſhould expoſe them to the open Air until the latter End of *October*, or later, according as you find the Weather favourable; you muſt then remove the Pots into the Green-houſe, where they ſhould be placed as near the Window as poſſible, that they may have a good Quantity of free Air at all Times, when the Weather is mild; nor ſhould they be over hung by other Plants, which would occaſion them to take a Mouldineſs, and rot; you muſt often refreſh them with Water, giving it plentifully in mild Weather, otherwiſe their Leaves and Branches will hang down and wither; in Summer they can ſcarce have too much Water given them, if the Pots are not ſtopped, ſo that the Water may get through the Holes at the Bottom. They will alſo require to be ſhifted into other Pots two or three Times, at leaſt, every Summer, and the Pots ſhould be frequently removed, to prevent the Plants from ſtriking their Roots through the Holes into the Ground, which they are very apt to do, and then they will ſhoot very vigorouſly; but when theſe Roots are torn off, by removing the Pots, the Plants are often killed.

All theſe Plants ſhould be frequently renewed by Cuttings, becauſe the old Plants are ſubject to decay in Winter; therefore if young Plants are not annually raiſed, the Species may ſoon be loſt.

If the Green-houſe, in which theſe Plants are placed in Winter, is ſubject to Damps, it will be very difficult to preſerve ſome of the Sorts, for when the Windows are kept cloſe, the tender Parts of their Shoots are very ſubject to a Mouldineſs, which will ſoon cauſe the Plants to decay, if it is not conſtantly cleaned off, and free Air admitted to dry off the Damps.

ARCUATION; the raiſing of Trees by Layers.

The firſt Thing to be done, is, to procure ſtrong Mother Plants, which are uſually called Stools. It is no Matter whether the Trees be crooked or deformed; and the larger they are, the better to cut down cloſe to the Ground. They are to be planted in a Border ſix Feet wide, and in a ſtrait Line ſix Feet aſunder.

The Border muſt be well trenched, or dug, and cleared from all Roots, Clods, Stones, or other Obſtructions. The Trunks, or Stools, being planted in this Trench, will throw out twenty, thirty, forty, or fifty Shoots; which may be laid about the *Michaelmas* following; at which Time, if the Stools have been carefully managed, they will have ſhot five, ſix, or more main Branches out of the Root; and on every one of theſe, as many ſide, or collateral Branches.

Theſe main Branches muſt be bent down to the Ground; and ſome cut them half through, that they may bend the eaſier.

When the main Branches are thus laid round the Stool, and pegged faſt down, then the ſmall ones may be pegged down too, and thus the main Branches, or Shoots, will be covered all over, except the very Top, and all the ſmall and fine Branches muſt be covered three Inches thick upon the Joints; ſome Perſons give the Branches a Twiſt, in order to make them take Root the ſooner. If they be mulched, or ſome ſtrawy Dung laid over them, it will be of Uſe to keep them moiſt; they ought alſo to have a large Baſon of Earth made round them to hold the Water, in order to water them the enſuing Summer; which they will require ſometimes, if the Weather be hot and dry. About the Middle of *September* following they may be opened and examined, to ſee if they have taken Root, which is very probable; but if not, they muſt be let to lie till the next Autumn; when they are to be taken up, and planted in the Nurſery.

This may be done to the *Dutch*, Witch, and *Engliſh* Elm; the Abeal, Lime, Alder, *Platanus*, and all Sorts of Sallows and Willows, as alſo many Sorts of ever-green Trees, and flowering Shrubs.

ARGEMONE, prickly Poppy.

The *Characters* are,

The Flower hath a three leaved Empalement, which falls off; it hath five roundiſh Petals, which ſpread open, and are larger than the Empalement, in the Center is ſituated an oval five cornered Germen, crowned by a large obtuſe Stigma, which is permanent, and divided into five Parts. This is attended by a great Number of Stamina, which are crowned by oblong erect Summits; the Germen afterward becomes an oval Seed Veſſel, having five Angles, and ſo many Cells, which are filled with ſmall rough Seeds.

There is but one *Species* of this Plant known, *viz.*

ARGEMONE *Mexicana. Tourn.* The Prickly Poppy.

This is an annual Plant, which is very common in moſt Parts of the *Weſt-Indies*; and is, by the *Spaniards*, called *Fico del Inferno*, or the Devil's Fig; there is no great Beauty or Uſe of this Plant amongſt us, that I know of; but whoever hath a mind to cultivate it, ſhould ſow it on a Bed of light Earth, in the Spring, where it is to remain; and if it comes up too thick, the Plants muſt be thined out to four Inches Diſtance; where, when once it has ſhed its Seed, you will not want Plants for ſeveral Years after. I have been informed that Gumbouge is made from the Juice of this Plant, but how true I cannot take upon me to determine.

ARIA THEOPHRASTI. *See* Cratægus.

ARISARUM. *See* Arum.

ARISTOLOCHIA. Birthwort.

The *Characters* are,

The Flower hath no Empalement; it is of one Leaf, which is unequal, the Baſe is ſwelling and globular, afterward is extended in a cylindrical Tube, which ſpreads open at the Brim, where the lower Part is ſtretched out like a Tongue. It hath no Stamina, but there are ſix Summits which join the under Part of the Stigma: The oblong angular Germen ſits under the Flower, ſupporting a concave globular Stigma, divided into ſix Parts; the Germen afterward turns to a large Seed Veſſel, differing in Form, which opens in ſix Cells, which are filled with Seeds, for the moſt Part compreſſed.

The *Species* are,

1. ARISTOLOCHIA *foliis cordatis, ſubſeſſilibus obtuſis, caule infirmo, floribus ſolitariis. Lin. Sp. Plant.* 962. Birthwort with blunt Heart-ſhaped Leaves, growing cloſe, a weak Stalk, and Flowers growing ſingly. Round rooted Birthwort with a black purple Flower.

2. ARISTOLOCHIA *foliis cordatis petiolatis integerrimis obtuſiuſculis, caule infirmo floribus ſolitariis. Lin. Sp. Plant.* 962. Birthwort with intire Heart-ſhaped blunt Leaves, having Foot Stalks, a weak Stalk, and Flowers growing ſingly. True long rooted Birthwort.

3. ARISTOLOCHIA *foliis cordatis, caule erecto, floribus axillaribus confertis. Hort. Upſal.* 279. Birthwort with Heart-ſhaped Leaves, an upright Stalk, and Flowers growing in Cluſters from the Side of the Stalks. Upright or climbing Birthwort.

4. ARISTOLOCHIA *foliis cordatis, crenulatis petiolatis, floribus ſolitariis. Lin. Sp. Pl.* Birthwort with Heart-ſhaped indented Leaves, having Foot Stalks, and Flowers growing ſingly. Birthwort called Piſtolochia.

5. ARISTOLOCHIA *foliis cordato-oblongis undatis, caule infirmo, floribus ſolitariis. L. Sp. P.* Birthwort with oblong Heart-ſhaped waved Leaves, a weak Stalk, and Flowers growing ſingly. Ever-green Birthwort of *Crete*.

6. ARISTOLOCHIA *foliis cordato-oblongis planis, caulibus infirmis flexuoſis, teretibus floribus ſolitariis. Lin. Sp. Pl.* 961. Birthwort with plain oblong Heart-ſhaped Leaves, flexible weak Stalks, and Flowers growing ſingly. The *Virginia* Snakeroot.

7. ARISTOLOCHIA *foliis cordato-lanceolatis caule erecto fruticoſo. Lin. Sp. Pl.* 960. Birthwort with Spear-ſhaped Leaves, in Form of a Heart, and an upright ſhrubby Stalk. *Virginia* Birthwort with eared Leaves.

8. ARISTOLOCHIA *foliis cordato-oblongis caule volubili pedunculis multifloris. F. Z.* Birthwort with oblong Heart-ſhaped Leaves, a twining Stalk, and many Flowers upon each Foot Stalk. The *Contrayerva* of *Jamaica*.

9. ARISTOLOCHIA *hirta floribus ſolitariis pendulis recurvatis ſublabiatis. Lin. Sp. Plant.* 961. Hairy Birthwort with hanging recurved Flowers, growing ſingly, and formed like a Lip. Long rooted hairy Birthwort with an oblong Leaf and a large Flower.

10. ARISTOLOCHIA *foliis cordatis petiolis longiſſimis, caule ſcandente, floribus terminalibus pediculis longiſſimis.* Birthwort with a climbing Stalk, Heart-ſhaped Leaves, with very long Foot Stalks, and Flowers growing at the End of the Branches upon very long Foot Stalks.

11. ARISTOLOCHIA *foliis cordatis petiolatis, caule ſcandente, floribus axillaribus confertis.* Birthwort with Heart-ſhaped Leaves, a climbing Stalk, and Flowers growing in Cluſters from the Wings of the Stalk.

12. ARISTOLOCHIA *foliis lanceolatis ſeſſilibus ſubhirſutis, caule erecto floribus ſolitariis longiſſimis.* Birthwort with Spear-ſhaped hairy Leaves, growing cloſe to the Branches, an upright Stalk, and very long Flowers growing ſingly. Upright Birthwort with a blackiſh purple Flower, narrow Leaves, and a creeping Root.

13. ARISTOLOCHIA *foliis oblongo-ovatis obtuſis integerrimis, caule ſcandente floribus terminalibus, fructibus*

hexangularibus maximis. Birthwort with a climbing Stalk oblong oval entire blunt Leaves, Flowers at the Ends of the Branches, and very large Fruit with ſix Angles.

The 1ſt and 2d Sorts grow naturally in the South of *France*, in *Spain*, and *Italy*, from whence their Roots are brought for medicinal Uſe. The Roots of the 1ſt Sort are roundiſh, and grow to the Size of ſmall Turneps; and are in Shape and Colour like the Roots of the common Cyclamen, the Roots of which are frequently ſold in the Markets for thoſe of the round Birthwort, which at firſt may have been occaſioned by the ſuppoſed Virtues of the Roots of the Cyclamen: Many of the old Writers on Phyſic having related, that if a pregnant Woman ſtept over one of theſe Roots, it occaſioned Miſcarriage; and that the Roots, properly applied, promoted the Delivery. Theſe ſend out three or four weak trailing Branches, which lie on the Ground when not ſupported, and extend to the Length of two Feet; the Leaves are Heart-ſhaped, and rounded at their Extremity; theſe are placed alternately on the Stalks; and cloſe to the Foot Stalks of the Leaves, the Flowers come out ſingly, at every Leaf, toward the upper Part of the Stalk. They are of a purpliſh black Colour, and ſhaped like thoſe of the other Sorts, and are frequently ſucceeded by oval Seed Veſſels, having ſix Cells, full of flat Seeds. The Flowers appear in *June* and *July*, and the Seeds ripen in Autumn.

The 2d Sort hath long tap Roots, ſhaped like Carrots; theſe ſend out weak trailing Branches, which extend little more than a Foot; the Leaves are paler, and have longer Foot Stalks than the firſt; theſe are placed alternately, and the Flowers come out from the Wing of the Leaves, like the other, which are not ſo long, and of a pale purple Colour: They are ſometimes ſucceeded by oblong Seed Veſſels, having ſix Cells filled with compreſſed Seeds. The Stalks of both Sorts decay in the Autumn, and new ones are produced in the Spring.

They are both propagated by Seeds, which ſhould be ſown in Autumn, in Pots filled with light Earth, and placed under a Frame, to be ſcreened from the Froſt: but the Glaſſes ſhould be taken off at all Times when the Weather is mild, and only covered in hard Froſt, or during too much Wet. If theſe Pots are put into a gentle hot Bed in *March*, it will bring up the Plants much ſooner. When the Plants appear, they ſhould be ſhaded from the Sun, in the Heat of the Day; and muſt be frequently refreſhed with Water. As the Seaſon advances the Plants ſhould be inured by Degrees to bear the open Air, for they ſhould not be drawn weak; and when the Pots are taken out of the Bed, they muſt be placed where they may enjoy the Morning Sun, but ſcreened from it in the Heat of the Day. The Weeds muſt conſtantly be taken out of the Pots, and gentle Refreſhings of Water given to the Plants in dry Weather during Summer; but in Autumn, when their Stalks begin to decay, they muſt have little Wet: In Winter the Pots muſt be ſheltered as before; and in *March*, before the Roots begin to ſhoot, they ſhould be tranſplanted into ſeparate ſmall Pots filled with light Earth, and ſet under the Frame again, where they ſhould remain till the End of *April*, when they may be removed into the open Air, and treated in the ſame Manner as in the former Summer, and ſheltered alſo the following Winter. The next Spring they may be turned out of the Pots, and planted in a warm Border, where, during the Summer, they will require no other Care but to keep them clean from Weeds, and in the Autumn when their Stalks are decayed, if the Border is covered with old Tanners Bark to keep out the Froſt, the Roots will be ſecured; but where this Care is not taken, the Roots are frequently killed by Froſt. With this Management the Roots will thrive much better than thoſe which are kept in Pots, and continue longer; and when three Years old they will flower and produce Plenty of Seeds, whereas thoſe in Pots ſeldom perfect their Seeds in *England*.

When the Seeds of theſe Plants are ſown in Spring, the Plants will not appear till the Spring following; ſo that a whole Seaſon is loſt, and many times they fail, therefore it ſhould always be ſown in the Autumn.

The 3d Sort grows naturally in *France*, *Spain*, *Italy*, and *Hungary*, but is preſerved in ſome of the *Engliſh* Gardens being ſometimes uſed in Medicine. This is a great creeper at the Root; and if once it has taken in a Garden, it will be difficult to extirpate again, and will over-run whatever Plants grow near it; therefore it ſhould be planted in ſome abject Part of the Garden by itſelf, for it will thrive in almoſt any Soil or Situation.

The 4th Sort grows wild in *Spain*, *Italy*, and the South of *France*; but in *England* it is preſerved, for Variety, in Botanic Gardens. The Plants muſt be ſet in Pots filled with light rich Earth, and ſheltered from ſevere Cold in Winter, or they will be deſtroyed; but they ſhould have as much free Air as poſſible in mild Weather. This produces Flowers every Year; but never perfects Seeds here.

The 5th Sort grows naturally in *Crete*, but has long been an Inhabitant in the *Engliſh* Gardens. The Root of this Sort is perennial, and ſends out many trailing Branches, which extend to about one Foot and a Half in Length; theſe are garniſhed with oblong Heart-ſhaped Leaves, which are waved on their Edges, and Evergreen. The Flowers come out ſingly from the Wings of the Leaves, which are ſhaped like the others of this Genus, of a dark purple Colour, but never produce Seeds in *England*, ſo are propagated by parting of the Roots: This Sort is too tender to thrive in the open Air in Winter, ſo is preſerved in Pots, and placed under a common Frame in Winter, where they ſhould have free Air in mild Weather, but ſcreened from hard Froſt; in mild Winters I have had this Plant live abroad in a warm Border, but in hard Winters it will be deſtroyed; therefore one or two Plants ſhould be ſheltered to preſerve the Species.

The 6th Sort is the Snakeroot, which is greatly uſed in Medicine; theſe Roots are brought over from *Virginia* and *Carolina*, where there are two Species of this Plant, but this Sort is the beſt for Uſe. There are ſome of theſe preſerved in the Gardens of thoſe who are curious in collecting rare Plants; but as they are ſometimes killed by Froſt in Winter, ſo they are not very common in the *Engliſh* Gardens. This Sort is propagated by Seeds, ſown in the Autumn, in ſmall Pots filled with light ſandy Earth, and placed under a common Frame in Winter, and afterward treated in the ſame Manner as directed for the two firſt Sorts; with which Management they will produce Flowers, and perfect their Seeds every Year.

The 7th Sort grows naturally in *North America*, and is by ſome called Snakeroot, but is not near ſo ſtrong as the former; the Branches of this grow erect, and are perennial, whereas thoſe of the other Sort decay to the Root every Winter: This riſes about two Feet high; the Branches are not woody, but are ſtrong enough to ſupport themſelves; the Leaves are oblong and Heart-ſhaped; the Flowers come out ſingly at the Wings of the Leaves. This Sort will live abroad in warm Borders, with a little Protection in hard Froſts. It is propagated by Seeds as the former, and may alſo be increaſed by parting of the Roots. It is generally kept in Pots, and ſheltered in Winter, but thoſe which are planted in the full Ground will thrive much better, provided they are ſcreened from hard Froſts.

The 8th Sort grows naturally in *Jamaica*, where it is called *Contrayerva*, and the Roots uſed as ſuch: This hath long trailing Branches, which climb upon the neighbouring Plants, and riſe to a conſiderable Height; the Leaves are placed alternately, and are of the long Heart-ſhaped Kind; the Flowers are produced in ſmall Cluſters, toward the upper Part of the Stalks, which are of a dark purple Colour; the Seed Veſſels are oblong and ſmooth. This Plant is tender, and in Winter ſhould have very little Wet, ſo muſt be conſtantly kept in the Stove, otherwiſe it will not live in *England*.

The 9th Sort was diſcovered by Dr. *Tournefort* in the *Levant*. This hath ſome Reſemblance to the ſecond Sort, but the Leaves are not ſo deeply eared at Bottom, and are hairy; the Flowers of this are alſo much larger. This may be propagated by Seeds, in the ſame Manner as hath been directed for the firſt and ſecond Sorts, and the Plants treated ſo will thrive very well here.

The 10th Sort ſends out climbing Stalks, which ſupport themſelves by faſtening to the neighbouring Trees, and thereby riſe to a very great Height; the Leaves are very broad and Heart-ſhaped, having ſeveral longitudinal Ribs; the Flowers grow in looſe Bunches at the Extremity of the Branches, each having a long Foot Stalk: This is tender, ſo muſt be kept in a Stove, and treated as other tender exotic Plants. It grows naturally about *Tolu* in *New Spain*, where it was diſcovered by Mr. *Robert Millar*, who ſent the Seeds to *England*.

The 11th Sort was diſcovered by the ſame Gentleman at *Campeachy* in *New Spain*: This Sort ſeldom climbs above three or four Feet high; the Leaves are ſhort and Heart-ſhaped, in ſome Meaſure like thoſe of the firſt; the Flowers come out in ſmall Cluſters from the Wings of the Leaves, and are of a dark purple Colour.

The 12th Sort was diſcovered at *La Vera Cruz* in *New Spain*, by the late Dr. *Houſtoun*, who ſent the Seeds to *Europe*: This riſes with an upright Stalk, to the Height of three Feet; the Leaves are long, narrow, hairy, and grow cloſe to the Branches, having ſcarce any Foot Stalk; the Flowers come out ſingly from the Wings of the Leaves, which are near four Inches long, are of a dark purple Colour, and grow erect; theſe are ſucceeded by ſlender Veſſels, about one Inch long, which open into ſix Cells, filled with flat Heart-ſhaped Seeds. It requires a warm Stove to preſerve it in this Country.

The 13th Sort was diſcovered by Mr. *Robert Millar*, near *Carthagena* in *New Spain*; this hath ſtrong climbing Stalks, by which it mounts up to the Top of the talleſt Trees; the Leaves are four Inches long, and two broad, of an oval Shape, rounded at their Ends, and are nearly as thick as thoſe of the common Laurel; the Flowers come out in looſe Cluſters at the Ends of the Shoots, each ſtanding on a very long Foot Stalk; the Seed Veſſels are four Inches long, and as much in Circumference, having ſix longitudinal Ribs, which make ſo many Angles, being very prominent; they open into ſix Cells, which are filled with Heart-ſhaped Seeds.

All theſe Sorts, which are Natives of the warm Parts of *America*, are too tender to thrive in the open Air in this Country, and require a Stove to preſerve them. They are propagated by Seeds, which muſt be procured from the Countries where they grow naturally, for they do not produce any here. As the Seeds are a conſiderable Time in their Paſſage, ſo they ſhould be brought over in their Pods; for many of the Sorts have very thin light Seeds, which are ſoon dried in a hot Country, when they are out of their Covers, which will ſpoil them for growing. So ſoon as the Seeds arrive, they ſhould be ſown in ſmall Pots filled with light Earth; and if this happens in Autumn, or Winter, the Pots ſhould be plunged into the Tan in the Bark Stove, between ſome of the Pots with large Plants, which will ſcreen them from the Sun; for as theſe Plants delight in Shade, ſo, by thus placing of the Pots, the Earth will not dry very faſt, which will be of great Advantage to the Seeds, which ſhould not be too often watered. Here the Pots may remain till *March*, at which Time they ſhould be removed, and plunged into a hot Bed, under Frames, where, if the Seeds are good, the Plants will appear in *May*: But if the Seeds arrive in Spring or Summer, they muſt be immediately ſown in ſmall Pots, and plunged into a moderate hot Bed, obſerving to ſhade them conſtantly in the Heat of the Day; but the Seeds ſown at this Seaſon ſeldom grow the ſame Year; therefore if the Plants do not appear, the Pots ſhould be plunged in the Tan Bed of the Stove in Autumn, and in the Spring following, treated as before directed, which will bring up the Plants. When theſe are ſtrong enough to tranſplant, they ſhould be each put into a ſmall Pot, and plunged into the Tan Bed in the Stove, and treated as other tender Plants from the ſame Countries.

ARMENIACA, the Apricot.

The *Characters* are,

The Empalement of the Flower is of the open Bell-ſhaped Kind, and is cut into five blunt Segments at the Top; the Flower is compoſed of five large roundiſh Petals which ſpread open, whoſe Baſe are inſerted in the Empalement; in the Center is placed a round Germen, ſupporting a ſlender Style, crowned by a round Stigma; this is attended by upward of twenty Awl-ſhaped Stamina, which are crowned by ſhort double Summits. The Germen afterward becomes a roundiſh pulpy Fruit, having a longitudinal Furrow incloſing a roundiſh Nut, which is a little compreſſed on the Sides.

The *Varieties* are,

1. The Maſculine Apricot. 2. The Orange Apricot. 3. The *Algier* Apricot. 4. The *Roman* Apricot. 5. The *Turkey* Apricot. 6. The *Breda* Apricot. 7. The *Bruſſels* Apricot.

The Maſculine is the firſt ripe of all the Apricots; it is a ſmall, roundiſh Fruit, of a red Colour towards the Sun; as it ripens, the Colour fades to a greeniſh yellow on the other Side. It is only preſerved for being the firſt ripe, having little Flavour; the Tree is very apt to be covered with Flowers, but as they come out early in the

Spring, they are frequently deſtroyed by the Cold, unleſs the Trees are covered to protect them.

The Orange is the next ripe Apricot; this Fruit is much larger than the former, and as it ripens, changes to a deep yellow Colour. The Fleſh is dry and not high flavoured, it is better for Tarts than for the Table.

The *Algier* ripens next; this is of an oval Shape, a little compreſſed on the Sides; it turns to a pale yellow, or Straw Colour, when ripe; the Fleſh is dry, and not high flavoured: This, and what is by ſome called the common Apricot, are often confounded.

The *Roman* is the next ripe Apricot; this is a larger Fruit than the former, and not compreſſed ſo much on the Sides; the Colour is deeper, and the Fleſh not ſo dry.

The *Turkey* Apricot is yet larger than either of the former, and of a globular Figure; the Fruit turns to a deeper Colour than the former; the Fleſh is firmer, and of a higher Flavour than either of them.

The *Breda* Apricot (as it is called from its being brought from thence into *England)* was originally brought from *Africa:* This is a large roundiſh Fruit, changing to a deep yellow when ripe; the Fleſh is ſoft, full of Juice, and of a deep Orange Colour within Side; the Stone is rounder and larger than any of the other Sorts: This is the beſt Apricot we have, and when ripened on a Standard, is preferable to all other Kinds.

The *Bruſſels* is the lateſt ripe of all the Apricots, for when planted againſt a Wall, it is generally the Beginning of *Auguſt* before it is ripe, unleſs when planted to a full South Aſpect; which is what ſhould not be practiſed, becauſe the Fruit is never well taſted which grows in a warm Expoſure. This Fruit is of a middling Size, rather inclining to an oval Figure; red on the Side next the Sun, with many dark Spots, and of a greeniſh yellow on the other Side; the Fleſh is firm, and of a high Flavour; the Fruit often cracks before it is ripe. This is commonly prefered to the former Sort, but when the other is planted as a Standard, the Fruit is fuller of Juice, and of a richer Flavour than this.

Moſt People train theſe Trees up to Stems of ſix or ſeven Feet high, or bud them upon Stocks of that Height; but this is a Practice I would not recommend, becauſe the higher the Heads of theſe Trees are, the more they are expoſed to the cutting Winds in Spring, which too frequently deſtroy the Bloſſoms; the Fruit is alſo more liable to be blown down in Summer, eſpecially if there ſhould happen to be much Wind at the Time when the Fruit is ripe; which by falling from a great Height, will be bruiſed and ſpoiled; therefore I prefer half Standards, of about two and a Half, or three Feet in the Stem, to thoſe which are much taller; or to plant them as Dwarfs againſt an Eſpalier, where, if ſkilfully managed, they will produce a large Quantity of good Fruit; and the Trees in Eſpalier may be more conveniently covered in Spring, when the Seaſon proves bad, whereby there will be a greater Certainty of Fruit every Year.

Theſe Fruits are all propagated by budding them on Plum Stocks, and will readily take upon almoſt any Sort of Plum, provided the Stock be free and thriving (except the *Bruſſels* Kind, which is uſually budded on a Stock, called the *St. Julian*, which better ſuits this Tree, as being generally planted for Standards, than any other Sort of Plum will). The Manner of raiſing the Stocks, and budding theſe Trees, ſhall be treated of under their particular Articles, to which I refer the Reader, and ſhall proceed to their Planting and Management.

Theſe Trees are all (except the two laſt Sorts) planted againſt Walls, and ſhould have an Eaſt or Weſt Aſpect; for if they are planted full South, the great Heat cauſes them to be meally before they are well eatable.

The Borders under theſe Walls ſhould be ſix Feet wide, at leaſt, and if it were more, the better, but I would never adviſe the making of them ſo deep as is the general Cuſtom; for if the Earth be two Feet deep, or two and a Half at moſt, it is enough.

If your Ground is a wet cold Loam or Clay, you ſhould raiſe your Borders as much above the Level of the Surface as it will admit, laying ſome Stones or Rubbiſh in the Bottom, to prevent the Roots from running downwards; but if you plant upon a Chalk or Gravel, it will be better to raiſe the Borders above either to a proper Thickneſs, with good loamy Earth, than to ſink the Borders by removing the Chalk or Gravel; for although theſe are removed the whole Breadth of the Border, which we may allow to be eight Feet, and this Trench filled with good Earth, yet the Roots of the Trees will in a few Years extend this Length, and then meeting with the Chalk or Gravel, will occaſion the Leaves of the Trees to turn pale, and fall off early in the Seaſon, the Fruit will be ſmall, dry, and ill flavoured, and the Shoots of the Trees will be weak. But where the Borders are raiſed upon either to their full Height, the Roots will not ſtrike down into the Gravel or Chalk, but rather extend themſelves near the Surface, where they will meet with better Soil: And as theſe Trees are of long Duration, and old Trees are not only more fruitful than young, but the Fruit larger and better flavoured, the providing for their Continuance is abſolutely neceſſary.

The Soil I would in general adviſe for theſe, and all other Sorts of Fruit Trees, is freſh untried Earth, from a Paſture Ground, taken about ten Inches deep, with the Turf, and laid to rot and mellow at leaſt twelve Months before it is uſed; this muſt be often turned, to ſweeten and imbibe the nitrous Particles of the Air.

When the former Soil of the Border is taken away, this freſh Earth ſhould be laid on; and if the Borders are filled with it two Months before the Trees are planted, the Ground will be better ſettled, and not ſo liable to ſink after the Trees are planted: In filling the Borders, the Ground ſhould be raiſed four or five Inches above the Level they are deſigned, to allow for ſettling.

Your Borders being thus prepared, make Choice of ſuch Trees as are but of one Year's Growth from budding; and if your Soil is dry, or of a middling Temper, you ſhould prefer *October* as the beſt Seaſon for planting, eſpecially having at that Time, a greater Choice of Trees from the Nurſeries, before they have been picked and drawn over by others. The Manner of preparing theſe Trees for planting being the ſame of other Fruit Trees, I ſhall refer the Reader to the Article of *Peaches*, where he will find it largely treated of. But do not cut off any Part of the Head at that Time, unleſs there are any ſtrong foreright Shoots which will not come to the Wall; they may be taken quite away.

Your Trees being thus prepared, you muſt mark out the Diſtances they are to ſtand, which in a good ſtrong Soil, or againſt a low Wall, ſhould be twenty Feet or more; but in a moderate one, eighteen Feet is a good reaſonable Diſtance; then make a Hole where each Tree is to ſtand, and place its Stem about four Inches from the Wall, inclining the Head thereto; and after having fixed the Tree in the Ground, nail the Branches to the Wall, to prevent their ſhaking, and cover the Surface of the Ground round the Root with rotten Dung, to keep out the Froſt: In this State let it remain till the Beginning of *March*, when if the Weather is good, unnail the Branches, ſo as not to diſturb the Roots; and, being provided with a ſharp Knife, put your Foot cloſe to the Stem of the Tree; and holding with your Left-hand the Bottom of the Tree, to prevent its being diſturbed, with your Right cut off the Head of the Tree, if it has but one Stem, or where it may have two or more Shoots, each of them muſt be ſhortened, to about four or five Eyes above the Bud, ſo that the ſloping Side may be toward the Wall.

In Spring, if the Weather proves dry, you muſt now and then give your Trees a gentle Refreſhing with Water; and if you obſerve to water them with a Roſe to the watering Pot, all over their Heads, it will greatly help them; alſo lay ſome Turf, in the Manner directed for Apples, or ſome other Mulch, round their Roots, to prevent their drying during the Summer Seaſon, as new Branches are produced in Spring, obſerve to nail them to the Wall in a horizontal Poſition; and ſuch Shoots as are produced fore-right, muſt be entirely diſplaced. This muſt be repeated as often as it is neceſſary, to prevent their hanging from the Wall, but by no Means ſtop any of the Shoots in Summer.

At *Michaelmas*, when the Trees have done growing, you muſt unnail their Branches, and ſhorten them in Proportion to their Strength; a vigorous Branch may be left eight or nine Inches long, but a weak one not above five or ſix. I ſuppoſe many People will wonder at this Direction, eſpecially having allowed ſuch a Diſtance between the Trees, believing the Wall will never be filled by this Management; but my Reaſon for it is, that I would have no Part of the Wall left unfurniſhed with bearing Wood; which muſt be the Caſe, if the Branches are left to a greater Length at firſt; for it ſeldom happens, that more Buds than two or three ſhoot for Branches; and theſe are, for the moſt Part, ſuch as are at the extreme Part of the laſt Year's Wood; ſo that all the lower Part of the Shoots become naked, nor will they ever after produce Shoots; and this is the Reaſon we ſee ſo many Trees which have their bearing Wood ſituated only in the extreme Part of the Tree.

When you have ſhortened the Shoots, be ſure to nail them as horizontally as poſſible, for upon this it is that the future Good of the Tree chiefly depends.

The 2d Summer obſerve, as in the 1ſt, to diſplace all fore-right Shoots, as they are produced, nailing in the other cloſe to the Wall horizontally, ſo that the Middle of the Tree may be kept open; never ſhorten any of the Shoots in Summer, unleſs to furniſh Branches to fill vacant Places on the Wall; and never do this later than *April*, for Reaſons given in the Article of *Peaches*. At *Michaelmas* ſhorten theſe Shoots as directed for the firſt Year; the ſtrong ones may be left nine or ten Inches, and the weak ones ſix or ſeven at moſt.

The following Year's Management will be nearly the ſame, but obſerve, that Apricots produce their Bloſſom Buds, not only upon the laſt Year's Wood, but alſo upon the Curſons or Spurs, which are produced from the two Years Wood; great Care ſhould therefore be had in the Summer Management, not to hurt or diſplace theſe; obſerve alſo to ſhorten your Branches at the Winter Pruning, ſo as to furniſh freſh Wood in every Part of the Tree, and be ſure to cut out entirely all luxuriant Branches, or diſplace them as ſoon as they are produced, which, if left to grow, would exhauſt the Nouriſhment from the bearing Branches, which, in my Opinion, cannot be too ſtrong, provided they are kindly; for the more vigorous your Tree is, the more likely it is to reſiſt the Injuries of the Weather; and I have often ſeen Trees brought to ſo weak a Condition, as to be able only faintly to blow their Bloſſoms, and then moſt or all of the bearing Branches have died; which has given Occaſion to the Owner to imagine it was the Effect of a Blight, when, in reality, it was only for Want of right Management. I am fully perſuaded, half the Blights we hear complained of, proceed from nothing elſe but this.

Theſe few Rules, well executed, together with a little Obſervation and Care, will be ſufficient, and I believe the Reader will find what has been ſaid, if duly attended to, will anſwer his Deſign; for, without diligent Obſervation, there can be no ſuch Thing as a ſkilful Manager, let him have ever ſo many or good Inſtructions laid down to him.

The *Bruſſels* and *Breda* Apricots, being for the moſt part, planted for Standards, will require very little Pruning; only obſerve to take out all dead Wood, or ſuch Branches as croſs each other; this muſt be done early in Autumn, or in Spring after the cold Weather is paſt, that the Part may not Canker where the Inciſion is made.

ARMERIUS, Sweet William. *See* Dianthus.

ARNICA. *L. G. P. Doronicum. B. P.* Leopardſbane.

The *Characters* are,

The common Empalement is ſcaly, and ſhorter than the Rays of the Flower. It hath a compound Flower, the Border or Rays, being compoſed of many female Flowers, which ſpread open, and cut into three Parts at their End; the Diſk, or Middle, has many hermaphrodite Flowers, which are tubulous, and are cut into three unequal Segments at the Brim; theſe have each five ſhort Stamina, which are crowned with oblong Summits. The female Flowers have alſo five Awl-ſhaped Stamina, but no Summits; in the hermaphrodite Flowers the Germen is ſituated below the Flower, ſupporting a ſlender ſhort Style, crowned by a bifid Stigma. The Germen afterward becomes a ſingle oblong Seed, crowned with long ſlender Down.

The *Species* are,

1. Arnica *foliis ovatis integris, caulinis geminis oppoſitis. Lin. Sp. Plant.* 884. *Arnica* with entire oval Leaves, and thoſe on the Stalks growing oppoſite by Pairs. Leopardſbane with a Plantain Leaf.

2. Arnica *foliis alternis ſerratis. Hall. Helvet.* 737. *Arnica* with ſawed Leaves growing alternately. Leopardſbane with a ſweet Root.

3. Arnica *foliis ovatis denticulatis. Lin. Sp. Plant.* 885. *Arnica* with oval indented Leaves. Dandelion with an Elecampane Leaf.

The 1ſt Sort grows naturally upon the *Alps*, and many Mountains in *Germany*, and other cold Parts of *Europe*, and is greatly eſteemed by the *Germans* for its medicinal

Inſtances of their being killed, except in the hard Froſts of 1683, and $17\frac{39}{40}$. In theſe two Winters moſt of the Artichokes were deſtroyed in *England*; in the laſt of theſe Winters, it happened from the little Care which was taken of them, there having been no Froſt for ſo many Years before, which had injured them, that few People uſed any Care to preſerve them; but ſince that hard Froſt, many People have run into the other Extreme of covering all their Roots of Artichokes with long Dung every Winter, which is a very bad Method, becauſe the Dung lying near the Roots, is very apt to rot the beſt Plants; therefore I would adviſe the Earthing or Landing of the Artichokes to be deferred till the Middle, or latter End of *November*, provided the Seaſon continues mild; and towards *Chriſtmas*, if there is any Danger of ſevere Froſts, to lay a Quantity of long Dung, Peaſe Haulm, Tanners Bark, or any other light Covering over the Ridges of Earth, which will keep out the Froſt; and this being at a Diſtance from the Roots, will not injure them; but this Covering ſhould be carefully taken off the Beginning of *February*, or ſooner, provided the Seaſon is mild, or at leaſt ſo ſoon as the Weather is ſo, otherwiſe the Plants will be injured by its lying too long upon them.

It will alſo be a good Method, when any of the Roots are dug up in Autumn, to bury them deep in the Ground in a Pit till Spring, or lay them in a Heap, ſo as they may be eaſily covered in hard Froſts; and theſe may be a Supply, if thoſe in the Ground are deſtroyed.

When you have thus earthed them up, you have nothing more to do till *February* or *March*, by which Time they will have grown through the Ridge of the Earth; and, when the Weather is proper, muſt be dreſſed as was before directed.

When you have a Mind to make a new Plantation, after having dug and buried ſome very rotten Dung in the Ground allotted for that Purpoſe, make Choice of ſuch of your Plants as were taken from old Stocks, which are clear, ſound, and not woody, having ſome Fibres to their Bottom; then with your Knife cut off that knobbed woody Part, which joined them to the Stock; and if that cuts criſp and tender, it is a Sign of its Goodneſs, but if tough and ſtringy, throw it away as good for nothing, and cut off the large outſide Leaves pretty low, that the Middle, or Heart Leaves, may be above them. Your Plants being thus prepared (if the Weather is very dry, or the Plants have been at any Time taken from the Stocks, it will be proper to ſet them upright in a Tub of Water for three or four Hours before they are planted, which will greatly refreſh them), you muſt then proceed to Planting, which muſt be done by ranging a Line acroſs the Ground, in order to their being placed exactly in a Row, and, with a Meaſure Stick, plant them at two Feet Diſtance from each other in the Rows, and if deſigned for a full Crop, five Feet Diſtance Row from Row; your Plants muſt be ſet about four Inches deep, and the Earth cloſed very faſt to their Roots, obſerving if the Seaſon proves dry, to give them water two or three Times a Week, until they are growing, after which they ſeldom require any.

N. B. You may ſow a thin Crop of Spinage upon the Ground before you plant your Plants, obſerving to clear it from about them after it is come up.

Theſe Plants, in a kindly Seaſon, or a moiſt Soil, will produce the largeſt and beſt Artichokes ſome Time in *Auguſt* and *September*, after all thoſe from the old Stocks are paſt; ſo that if you intend to continue your Artichokes through the whole Seaſon, you muſt make a new Plantation every Year, otherwiſe you cannot poſſibly have Fruit longer than two or three Months.

If any of thoſe planted in Spring, ſhould not Fruit in Autumn, you may, at the Seaſon of Earthing your Roots, tie up the Leaves with a ſmall Willow Twig, *&c.* and lay the Earth up cloſe to it, ſo that the Top of the Plant may be above Ground, and when the Froſt comes on, if you will cover the Top with a little Straw, or Peaſe Haulm, to prevent their being killed by it, theſe Plants will produce Fruit in Winter, or early in the Spring.

But in thoſe Plantations where you intend to plant other Things between your Artichokes, you muſt allow nine or ten Feet between the Rows, as is often practiſed by the Kitchen Gardeners near *London*, who ſow the Ground between with Radiſhes or Spinage, and plant two Rows of Cauliflowers, at four Feet Diſtance Row from Row, and two Feet and a Half Diſtance in the Rows between them; ſo that there are always five Feet allowed for the Artichokes to grow; and in *May*, when the Radiſhes or Spinage are taken off, they ſow a Row of Cucumbers for Pickling, exactly between the two Rows of Cauliflowers, and at three Feet Diſtance from each other; and between the Rows of Cauliflowers and the Artichokes, plant a Row of Cabbages or Savoys for Winter Uſe, which, when the Cauliflowers are drawn off, and the Artichokes gathered, will have full Liberty to grow; and by this Means the Ground is fully employed the whole Seaſon. This has long been the Practice of the Kitchen Gardeners near *London*, who pay large Rents for their Land, ſo are obliged to get as many Crops in a Year from it as poſſible.

In thoſe which are planted at five Feet Diſtance Row from Row, you may plant in every other Row a Line of Cabbages or Savoys for Winter Uſe, which will be gone by the Time of landing them up; in the doing of which you muſt lay the whole five Feet of Earth into one Ridge, except the Ground be extreme ſtiff, or the Plants young, in both which Caſes you may lay only three Feet and a Half of the Ground in the Ridge over the Roots, and the Remainder may be laid in a ſmall Ridge between; the ſame Compaſs of Ground muſt alſo be allowed where they are planted at a wider Diſtance.

And if in Spring your Stocks ſhoot very weak, which may have been occaſioned by hard Froſt, or too much Wet, you muſt then uncover them, and with a Spade looſen and break the Earth about them, raiſing a ſmall Hill about each Stock, levelling the reſt between the Rows, which will greatly help them; and in three Weeks, or a Month after, they are commonly fit to ſlip.

Thoſe Artichokes which are planted in a moiſt rich Soil, will always produce the largeſt and beſt Fruit; ſo that where ſuch a Soil can be obtained, it will be proper to make a freſh Plantation every Spring to ſucceed the old Stocks, and ſupply the Table in Autumn. But the Roots will not live through the Winter in a moiſt Soil, ſo that your Stocks which you intend ſhould remain, to ſupply the Table early, and to furniſh Plants, ſhould be in a drier Situation. You ſhould always obſerve to plant theſe in an open Situation, and not under the Drip of Trees, where they will draw up very tall, and produce ſmall inſignificant Fruit.

ARTICHOKES of *Jeruſalem*. *See* Helianthus.

ARUM. Wake Robin, or Cuckow Pint.

The *Characters* are,

The Flower hath a large oblong Spatha, which is cloſed at the Bottom, compreſſed in the Middle, and coloured within; the Spadix is ſingle, ſhaped like a Club at the Top, and ſhorter than the Spatha, upon which the Germen are ſituated. It hath no Petals nor Stamina, but many four cornered Summits, ſitting cloſe to the Germen, with a double Row of Hairs between them, which adhere to the Spadix. There are many Germen which ſurround the upper Part of the Spadix, which are oval, having no Styles, but have bearded Stigma: The Germen afterward become globular Berries, with one Cell, having round Seeds.

This Plant is called Wake Robin, from the ſharp acrid Taſte, which, if eaten, will occaſion a violent Pain in every Part of the Mouth and Throat, attended commonly with a great Defluxion of Water.

The *Species* are,

1. ARUM *acaule foliis haſtatis integerrimis ſpadice clavato. Hort. Cliff.* 434. *Arum* without Stalk, Spear-ſhaped Leaves, which are entire, and a Club-ſhaped Spadix. This is the *Arum vulgare, C. B. P.* 195. Common *Arum*, or Wake Robin, with ſpotted and plain Leaves.

2. ARUM *acaule foliis haſtatis acutis petiolis longiſſimis ſpathâ maximâ erectâ.* *Arum* without Stalk, pointed Spear-ſhaped Leaves, with very long Petals, and a large upright Spatha. Largeſt *Italian Arum*, with white Veins.

3. ARUM *acaule foliis haſtatis ſpathâ declinatâ filiformi-ſubulatâ, Lin. Sp. Plant.* 966. *Arum* without Stalk, Spear-ſhaped Leaves, and a declining Spatha, which is narrow and Awl-ſhaped. *Ariſarum flore intenuem, &c. T.* 161. Friars Cowl with a Flower ending in a ſlender Tail.

4. ARUM *acaule foliis cordato-oblongis ſpathâ bifidâ ſpadice incurvo, Hort. Cliff.* 435. *Arum* without Stalk, oblong Heart-ſhaped Leaves, a bifid Spatha, and an incurved Spadix. Greater broad leaved Friars Cowl.

5. ARUM *acaule foliis lanceolatis ſpadice ſetaceo declinato. Hort. Cliff.* 345. *Arum* without Stalk, Spear-ſhaped Leaves, and a briſtly declining Spadix. Narrow-leaved Friars Cowl of *Dioſcordes*.

6. ARUM *acaule foliis haſtato-cordatis acutis angulis obtuſis. Hort. Cliff.* 434. *Arum* without Stalk, pointed Spear Heart-ſhaped Leaves, with obtuſe Angles.

7. ARUM *acaule foliis ternatis. Flor. Virg.* 113. Three leaved *Arum* without Stalk. Smaller three leaved *Arum* of *Virginia* with a green Piſtil.

8. ARUM *foliis pedatis, foliolis lanceolatis integerrimis æquantibus ſpatham ſpadice longiorem.* *Arum* with branching Leaves, compoſed of Spear-ſhaped entire Lobes, which are equal, and the Spatha much longer than the Spadix. *Dracunculus polyphyllus.* Common Dragon.

9. ARUM *foliis pedatis, foliolis lanceolatis integerrimis ſuperantibus ſpatham ſpadice breviorem. P. L.* *Arum* with branching Leaves, the upper being compoſed of Spear-ſhaped entire Lobes, and the Spatha ſhorter than the Spadix. Smaller dwarf *Arum* with many Leaves.

10. ARUM *acaule foliis trilobis flore ſeſſile. Flor. Zeyl.* 326. Three leaved *Arum* without Stalks, and a Flower growing cloſe to the Root. Broad leaved low *Arum* of *Ceylon* with a ſcarlet Piſtil.

11. ARUM *acaule foliis peltatis ovatis repandis baſi ſemibifidis. Hort. Cliff.* 434. *Arum* without Stalk, Target-ſhaped oval Leaves, waved and ſinuated at their Edges, and divided into two Parts at their Baſe. Greateſt *Ægyptian Arum*, vulgarly called *Colocaſia*.

12. ARUM *acaule foliis cordatis nervoſis floribus ſeſſilibus.* *Arum* without Stalk, nervous Heart-ſhaped Leaves, and Flowers without Petals. *American Arum* with a Beet Leaf called Scunk Weed.

13. ARUM *acaule foliis cordatis angulatis divaricatis. Lin. Sp. Plant.* 966. *Arum* without Stalk, and Heart-ſhaped Leaves, which are angular, and ſpread from each other. *Arum* without Stalk, and Spear-ſhaped Leaves.

14. ARUM *acaule foliis cordatis obtuſis mucronatis angulis rotundatis. H. C.* 435. *Arum* without Stalk, blunt Heart-ſhaped Leaves, which are pointed, and the Angles rounded. This is commonly called *Edder* in *America*.

15. ARUM *acaule foliis peltatis ovatis integerrimis baſi ſemibifidis. H. C.* 453. *Arum* without Stalk, and oval Target-ſhaped Leaves, whoſe Baſe are ſlightly divided in two Parts. Eatable *Arum* with a Water Lily Leaf.

16. ARUM *acaule foliis ſagittatis acuminatis nervoſis.* *Arum* without Stalk, and Lance-ſhaped Leaves, which are pointed and ribbed. Greateſt *Ægyptian Arum*, or *Colocaſia* with blackiſh Stalks.

17. ARUM *acaule foliis haſtatis acuminatis ſpathâ mucronatâ revolutâ.* *Arum* without Stalk, Lance-ſhaped pointed Leaves, and a pointed Spatha, which is twiſted. Dwarf broad leaved *Arum* of *Ceylon* with a purple Piſtil.

18. ARUM *caulеſcens foliis ſagittatis ſpathâ declinatâ clauſâ.* Stalky *Arum* with Lance-ſhaped Leaves, and a declining Spatha, which is ſhut up. Tree-like *Arum* with Lance-ſhaped Leaves; Commonly called Dumb Cane.

19. ARUM *acaule foliis oblongo-cordatis auriculis rotundioribus.* *Arum* without Stalk, oblong Heart-ſhaped Leaves, with round Ears. *Arum* with large Heart-ſhaped Leaves, and a red knotted Root.

The 1ſt Sort grows naturally in Woods, and on ſhady Banks in moſt Parts of *England*, ſo is ſeldom admitted into Gardens, but being a medicinal Plant, it is here inſerted to introduce the other Species. There are two Varieties of this, one with plain Leaves, and the other hath Leaves full of black Spots; but theſe are only accidental Varieties, which ariſe from the ſame Seeds. The Roots of this are ordered by the College of Phyſicians to be uſed in a Powder which bears the Title of the Plant; but theſe Roots are generally gathered in the Spring, when the Leaves are in full Vigour, ſo that the Roots ſhrink and ſoon looſe their pungent Quality; but thoſe which are taken up when the Leaves decay, will continue good a whole Year, and retain their Pungency the ſame as when firſt taken up. The not obſerving this, has brought the Medicine into Diſrepute. It flowers in *April*, and the Seeds ripen in *July*.

The 2d Sort grows naturally in *Italy*, *Spain*, and *Portugal*, from whence I received the Seeds. The Leaves are very large and riſe a Foot and a half high, running out to a Point; theſe are finely veined with white, interſperſed with black Spots, which, together with the fine ſhining green of their Surface, make a pretty Variety. The Flowers grow near a Foot high, and have very long upright Spathas, which are of a pale green, inclining to white; theſe appear the End of *April*, or Beginning of *May*, and the Seeds are ripe in *Auguſt*; this propagates very faſt by Offsets from the Root, and will thrive in any Soil or Situation. The beſt Time to tranſplant them is from the Time the Seeds are ripe, to the End of *October*, by which Time they will be putting out new Fibres.

The 3d, 4th, and 5th Sorts have been generally ſeparated from this Genus, and were diſtinguiſhed by the Title of *Ariſarum*, or Friar's Cowl, from the Reſemblance the Flower has in Shape to the Hoods or Cowls worn by that Order. Theſe are very low Plants, their Leaves having very ſhort Foot Stalks, and the Flowers grow cloſe to the Ground. They flower in *April*, but ſeldom produce Seeds in *England*; they multiply faſt by Offsets, and ſhould have a ſhady Situation: The Time for tranſplanting the Roots is the ſame as for the former. They are preſerved in ſome Gardens for Variety, but have little Beauty to recommend them.

The 6th and 7th Sorts grow naturally in *Virginia* and *Carolina*, from whence I received their Roots; theſe never riſe with Stalks, but their Leaves ariſe immediately from the Roots, having ſhort Foot Stalks; the Flowers, which have ſhort Foot Stalks, come up between their Leaves; they appear in *May*, but having little Beauty, the Plants are only kept in Botanic Gardens for Variety. They will live in the open Air, if planted in a ſheltered Situation, or if the Surface of the Ground is covered with Tan to keep out the Froſt, and will thrive better in the full Ground, than in Pots. They are propagated by Offsets, for they do not produce Seeds in *England*.

The 8th Sort is the common Dragon, which is uſed in Medicine, and is preſerved in Gardens to ſupply the Markets: It grows naturally in moſt of the Southern Parts of *Europe*. This Plant hath a large tuberous fleſhy Root, which, in the Spring puts up a ſtrait Stalk about three Feet high, ſpotted like the Belly of a Snake; at the Top it ſpreads out into Leaves, which are cut into ſeveral narrow Segments, almoſt to the Bottom; theſe are ſpread open like a Hand; at the Top of the Stalk the Flower is produced, which is in Shape like the Common *Arum*, having a very long Spatha of a dark purple Colour, ſtanding erect, with a large Piſtil of the ſame Colour, ſo that when it is in Flower, it makes no unpleaſing Appearance; but the Flower hath ſo ſtrong a Scent of Carrion, that few Perſons can endure it; for which Reaſon it hath been baniſhed moſt Gardens; but was it not for this, a few of the Plants might merit a Place in Gardens for the Oddneſs of the Flower. It is very hardy, ſo will grow in any Soil or Situation, and propagates faſt by Offsets from the Root. The Time to tranſplant it, is in Autumn, when their Leaves decay: It flowers in *June* and *July*, and the Stalks decay in *September*. There is a Variety of this with variegated Leaves and Stalks, it is equally hardy with the common Sort, and may be propagated in Plenty, but ſhould be planted in poor Ground, in order to prevent it from becoming plain, which it is apt to do in rich Land.

The 9th Sort grows naturally in moiſt Places in *Virginia* and *New England*, but is very difficult to preſerve long in a Garden. I received ſome Roots of this from *New England*, which continued two Years; but the Soil being dry, they decayed in Summer. Theſe ſhould have a moiſt ſhady Situation, otherwiſe they will not thrive: The Leaves are divided like thoſe of the former, but are ſmaller, and rarely grow more than nine Inches high; the Flowers are like thoſe of the common *Arum*, but the Piſtil is longer than the Spatha. It flowers in *June*, and the Stalks decay in Autumn.

The 10th Sort grows naturally in *Ceylon*, and ſome other Parts of *India*, ſo is very impatient of Cold: It is a Plant of humble Growth; the Leaves come up from the Root, having Foot Stalks about four Inches long; theſe are divided into three Lobes, which terminate in Points; the Flower riſes immediately from the Root, ſtanding on a very ſhort Foot Stalk; the Spatha is long, erect, and of a fine Scarlet within, as is alſo the Piſtil. This uſually appears in *May*, and the Leaves decay in *Auguſt*, but new ones ſoon after riſe from the Root. This Plant muſt be placed in the Tan Bed of the Bark Stove. It is propagated by Offsets from the Root, which come out in Plenty when the Plants are in Health.

The 11th, 13th, 14th, 15th, and 16th Sorts, have mild Roots, which are eaten by the Inhabitants of all the hot Countries, where they grow naturally, and ſome of the Sorts are cultivated by the Inhabitants of the Sugar Colonies, as eſculent Plants, their Roots being conſtantly eaten, as alſo are the Leaves of ſome of the Sorts, particularly the 15th, which they call *Indian Kale*: The Leaves of this are boiled, and ſupply the Want of other Greens. As there is a conſtant ſucceſſion of theſe all the Year, ſo a ſmall Spot of Ground, planted with theſe Roots, will be ſufficient to ſupply a large Family. It is eſteemed a wholeſome Green; and in thoſe Countries where many of the common *European* Vegetables are with Difficulty produced, this proves a good *Succedaneum*; but they ſeem to make little Diſtinction of the Species; for I have received the Roots of three Sorts, by the common Title of *Edder*; but I ſuppoſe the 14th Sort is the moſt commonly cultivated there for their Roots. The 16th Sort has not been many Years introduced among them, for it came originally from the *Spaniſh Weſt-Indies*, where it grows in great Plenty. Both theſe have larger Roots than the 15th, for which Reaſon they are preferred to it.

All theſe Sorts are preſerved by thoſe who are curious in collecting exotics, for the Variety of their Leaves; for their Flowers have very little Beauty, nor do they often appear in this Country. The Plants are propagated eaſily by Offsets from their Roots, which they put out plentifully: Theſe muſt be planted in Pots filled with rich Earth, and plunged into a hot Bed, to promote their taking Root; and if they are afterward continued in the Bark Stove, they will make great Progreſs, and their Leaves will be very large. They may be kept in a dry Stove, upon Shelves, after they are well eſtabliſhed in the Pots, but will not be ſo ſtrong as the other. Theſe Sorts are too tender to thrive in the open Air in *England*, at any Time of the Year, ſo ſhould conſtantly remain in the Stove, where a Plant or two of each Sort will make a pleaſing Variety with their large Leaves, which continue through the Year.

The 12th Sort grows naturally in *North America*. This requires a moiſt Soil, and ſhady Situation, but is hardy in reſpect of Cold. It flowered two Years in the Garden at *Chelſea*, but in a very dry Seaſon decayed.

ed. The Flowers came up before there was any Appearance of Leaves ; the Spatha was large, and the Piſtil ſhort and blunt ; the female Flowers were ranged each between a Sort of Checque Work, which was diagonal to the Piſtil ; the Flower decayed without any Appearance of Seed.

The Roots of the 17th Sort I received from *India* ; this annually flowers in *May* ; the Leaves grow near the Ground, having ſhort Foot Stalks ; they are divided into three ſharp pointed Lobes ; the Flower comes up immediately from the Root, upon a ſhort Foot Stalk ; the Spatha is long and turns downward, but the Piſtil ſtands erect : They are both of a very deep purple Colour, and ſmell almoſt like the Flower of Dragon ; this never hath any Appearance of Seeds, but is propagated by Offſets from the Roots. It is tender, ſo muſt be conſtantly kept in the Bark Stove, otherwiſe it will not thrive in *England*.

The 18th Sort riſes to the Height of ſix or ſeven Feet, with a green jointed Stalk, as large as a walking Stick ; the Leaves are placed irregularly at the Top of the Stalks, growing in a Cluſter : Theſe are oblong, and of a light green Colour ; from between the Leaves the Flowers come out on every Side of the Stalk ; theſe have a long Spatha of a pale green Colour, marked in every Part with white Spots : They have no Foot Stalks, but ſit cloſe to the Stem of the Plant ; at their firſt Appearance they ſtand erect, ſoon after they are horizontal, and in a little Time they decline downward ; their lower Part is ſwelling ſo far as the Flowers are ranged on the Piſtil, above which it is greatly contracted, and toward the Top enlarges again, where it is a little open, ſo as to ſhew the naked Part of the Piſtil, but is twiſted again at the Top. All the lower Part cloſely folds over the Piſtil, ſo that it is ſcarcely diſcernable, unleſs the Spatha is opened, which can only be done on one Side, the other adhering cloſely to the Piſtil, ſo far upward as the Flowers extend, the naked Part of the Piſtil only being ſeparated from it ; ſo that the female Flowers and Stamina are ranged only upon one Side of the Piſtil, in which it differs from all the other Species which I have ſeen.

It grows naturally in the Sugar Iſlands, and other warm Parts of *America*, chiefly in the low Grounds ; the whole Plant abounds with an acrid Juice, ſo that if a Leaf or Part of the Stalk is broken, and applied to the Tip of the Tongue, it occaſions a very painful Senſation, and occaſions the ſalivary Ducts to ſwell, and brings on on a great Defluxion of Saliva ; the Stalks of this Plant are ſometimes applied to the Mouths of the Negroes by way of Puniſhment. It is propagated by cutting off the Stalks into Lengths of three or four Joints, which muſt be laid to dry ſix Weeks or two Months ; for if the wounded Part is not perfectly healed over before the Cuttings are planted, they will rot and decay : Theſe ſhould be planted in ſmall Pots filled with light ſandy Earth, and plunged into a moderate hot Bed of Tan, being careful that they have little Wet, until they have made good Roots ; when they are well eſtabliſhed at Bottom, ſome of them may be placed in a dry Stove, and others plunged into the Tan Bed in the Bark Stove, where they will make the greateſt Progreſs, and produce more Flowers than the others. It is tender, ſo muſt be conſtantly kept in the Stove, and ſhould have very little Wet in Winter.

The 19th Sort grows low ; the Foot Stalks of the Leaves being very ſhort, and furrowed ; the Leaves are near two Feet long, and fifteen or ſixteen Inches broad, having two broad Ears at their Baſe, which are round : It grows naturally at *Campeachy*, from whence I received the Roots and Specimens, but they have not yet flowered in *England*. This Sort is tender, ſo muſt be conſtantly kept in the Bark Stove, and treated as other tender exotics, from hot Countries. It is propagated by Offſets from the Roots, for all theſe Species which are Natives of hot Countries never produce Seeds in *England*.

ARUM ÆTHIOPICUM. *See* Calla.

ARUM SCANDENS. *See* Dracontium.

ARUNDO, *Lin. Gen. Plant.* 76. The Reed.

The *Characters* are,

It is of the Graſs Tribe, the Flowers grow in Spikes, and are included in a Chaff which is oblong, pointed, and opens with two Valves. The Petals of the Flower are bivalve and longer than the Empalement, having a Down at their Baſe, which riſes almoſt their Length ; the Flower hath three hairy Stamina, crowned with horned Summits : in the Center is ſituated an oblong Germen, ſupporting two ſlender Styles which are hairy and reflexed, crowned with a ſimple Stigma. The Germen afterward becomes an oblong pointed Seed, with long Down adhering to its Baſe.

The *Species* are,

1. ARUNDO *calycibus quinquefloris paniculâ laxâ. Prod. Leyd.* 66. Reed with five Flowers in each Cup, growing in looſe Panicles. The common Marſh Reed.

2. ARUNDO *calycibus trifloris paniculâ diffuſâ. Prod. Leyd.* 66. Reed with three Flowers included in each Cup, growing in diffuſed Panicles. The manured Reed, or *Donax* of *Dioſcorides* ; this is ſometimes called by Gardeners the Ever-green Reed, but for what Reaſon I cannot imagine, becauſe the Stalks decay every Autumn, and new Shoots ariſe from the Roots in the Spring.

3. ARUNDO *Indica variegata ſeu Laconica Theophraſti. Cornut. Can.* 55. *Indian* variegated Reed.

4. ARUNDO *caule arboreo foliis acuminatis ſulcatis, baſi rotundioribus.* Reed with a Tree-like Stalk, and pointed furrowed Leaves, which are round at their Baſe. This is another Species of Bambu.

5. ARUNDO *caule arboreo foliis utrinque acuminatis.* Reed with a Tree-like Stalk, and Leaves which are pointed at both Ends. This is the *Ily Hort. Mal.* Vol. I. *p.* 25.

6. ARUNDO *Orientalis tenuifolia caule pleno ex quâ Turcæ calamos parant. Tourn. Cor.* 39. Eaſtern Reed with a narrow Leaf and a full Stalk, of which the *Turks* make their Writing Pens.

The 1ſt Sort is ſo very common by the Sides of Rivers and large ſtanding Waters in *England*, that it is needleſs to ſay any Thing of its Culture. This is cut in Autumn, when the Leaves begin to fall, and the Stems are changed brown, for making Hedges in Kitchen Gardens, and many other Uſes.

The 2d Sort, although Native of a warm Country, yet will bear the Cold of our ſevereſt Winters, in the open Ground ; it dies to the Surface in Autumn, and riſes again the ſucceeding Spring ; if kept ſupplied with Water in dry Weather, will grow ten or twelve Feet high the ſame Summer ; and is very proper to intermix with ſmall Trees and Shrubs, or tall Plants and Flowers in Boſquets, where, by the Oddneſs of its Appearance, it will have a good Effect, in adding to the Variety. This is propagated by parting the Roots early in the Spring, before they begin to ſhoot, and will, in a Year or two, in good Ground make very large Stools, ſo that from each Stool you may have twenty or thirty large Canes produced. This never produces any Spikes of Flowers in *England*.

The Stalks of this Sort are brought from *Portugal* and *Spain*, and are uſed by the Weavers, as alſo to make Fiſhing Rods.

The 3d Sort is ſuppoſed to be a Variety of the 2d, differing only in its variegated Leaves. But this I much doubt, becauſe the Sort with variegated Leaves is much tenderer than the other, ſo muſt be ſheltered from the Froſt, otherwiſe it will not live through the Winter in *England*. The Plant never grows to a third Part of the Height of the other, and the Leaves are narrower and much ſhorter; whether theſe Differences may not be occaſioned by the Weakneſs of the Plant, I cannot take upon me to determine; for it is well known that all thoſe Plants which have variegated Leaves, are much weaker than the plain, and do not grow ſo large, nor will they reſiſt the Cold ſo well. But as this is ſuppoſed to be a Native of a different Country, and by all the Writers who have mentioned it ſuppoſed to be different, ſo I have enumerated it among the Species.

The two Sorts of Bambu are of great Service to the Inhabitants of *India*, who make moſt of their common Utenſils of the Stems of theſe Canes, which grow to a prodigious Magnitude in thoſe Countries.

We have Plants of the 4th Sort in *England*, more than twenty Feet high; and if the Stoves in which they are kept were high enough to admit them, they would, according to Appearance, riſe to twice that Height. The Shoots are of quicker Growth than any other yet known, and riſe with an upright Stalk; for a ſtrong Shoot from the Root will riſe to twenty Feet in five Weeks, as I have for ſeveral Years obſerved. Some of theſe Stems are as large as a Man's Wriſt, but in general as big as Walking Sticks, and when dried are as fit for that Purpoſe, as thoſe imported. The Leaves are much broader than thoſe of the 5th, particularly at their Baſe; theſe Leaves are generally put round the Tea Cheſts in their Package, and are faſtened together ſo as to form a Kind of Mat.

The 5th Sort is more rare at preſent in *Europe*, though it is the moſt common on the Coaſt of *Malabar*.

They are both tender Plants, ſo will not live in this Country, unleſs kept in a warm Stove; and as their Roots ſpread very wide, they ſhould not be confined: Therefore to have them produce ſtrong Stems, they muſt be planted in large Tubs, filled with rich Earth, and plunged into the Tan Bed in the Bark Stove; and as they naturally grow in marſhy low Places, ſo they require Plenty of Water, eſpecially when the Roots have filled the Tubs in which they were planted. When the Tubs decay, the Boards may be removed, and the Plants permitted to root into the Tan, which will encourage them to grow to a larger Size; but then there muſt be Care taken when the Bed is refreſhed with new Tan, to leave a ſufficient Quantity of the old Tan about the Roots of the Plants; for if they are too much bared, and the new Tan laid near them, when that heats, it will ſcorch their Roots, and ſometimes deſtroy the Plants. Both Sorts are propagated by Slips from the Roots, taken off in Spring, that they may be well eſtabliſhed before Winter.

The 6th Sort is what the *Turks* make Writing Pens of; it grows in a Valley near Mount *Athos*, and on the Banks of the River *Jordan*. It may be managed as the Bambu; but there are none of the Plants in *England*.

ARUNDO SACCHARIFERA. *See* Saccharum.

ASARINA. *Tourn. Inſt.* Baſtard Aſarum.

The *Characters* are,

The Empalement of the Flower is of one Leaf, which is cut into five equal Segments almoſt to the Bottom. The Flower is of one Leaf, of the grining Kind, having a long cylindrical Tube, and divided at the Top into two Lips, the upper one being divided into two Parts, whoſe Edges are reflexed. The lower Lip is ſlightly cut into three Parts which are obtuſe; the two Lips join cloſe together, ſo as to form a Kind of Snout. It hath four Stamina, two of which are longer than the other; in the Center is placed a round Germen ſupporting a ſingle Style crowned by an obtuſe Stigma. The Germen afterward turns to a round Huſk, divided into two Cells, which are full of roundiſh Seeds.

The *Species* are,

1. ASARINA *caule decumbente foliis oppoſitis reniformibus crenatis.* Baſtard *Aſarum* with a trailing Stalk, and Kidney-ſhaped Leaves growing oppoſite, indented on their Edges. *Aſarina*, or Rock Ground-ivy.

2. ASARINA *caule erecto foliis lanceolatis amplexicaulibus paniculâ dichotomâ.* Baſtard *Aſarum* with an upright Stalk, Spear-ſhaped Leaves which embrace the Stalks, and Spikes of Flowers coming out from the Diviſion of the Branches. This is the *Penſtemon. Mitch. Gen.* 14.

The 1ſt Sort is a low trailing annual Plant, the Branches extend little more than a Foot each Way, are weak and unleſs ſupported, they lie upon the Ground; theſe are garniſhed with Leaves like thoſe of Groundivy, which grow oppoſite by Pairs; at the Wings of the Leaves the Flowers come out ſingly on each Side the Stalk, which are ſhaped like thoſe of Snap-dragon, but have a long Tube; they are of a worn-out purple Colour at the Top, but below of an herbaceous Colour. Theſe come out in *June*, and the Seeds ripen in *September*, which ſhould be ſown ſoon after, or permitted to ſcatter, for when ſown in Spring they ſeldom grow. The Plants ſhould remain where they are ſown, and require no other Care but to keep clean from Weeds, and thin them where they grow too cloſe. As there is not much Beauty in this Plant, ſo two or three of them will be enough in a Garden for Variety. It grows naturally in *Italy* and the South of *France*.

The 2d Sort grows naturally in *North America*, from whence I received the Seeds. This Plant hath upright Stalks, which grow a Foot and a Half high; and put out ſeveral Side Branches; theſe are garniſhed with oblong Spear-ſhaped Leaves ending in a Point, which grow oppoſite, and embrace the Stalks at their Baſe; the Flowers come out in ſhort looſe Spikes from the Diviſions of the Stalks, which are ſhaped like thoſe of the former but leſs, and of a purple Colour. They appear in *June* and *July*, and their Seeds ripen in *September*.

The Seeds of this Sort ſhould be ſown in Autumn, for thoſe which are ſown in Spring, ſeldom grow the ſame Year, but remain in the Ground till the following

Spring. The Plants when ſtrong enough to remove, ſhould be tranſplanted into a ſhady Border, which will prevent their Flowering the ſame Year; and in the Autumn they may be planted in the Borders of the Flower Garden. The Roots ſeldom laſt above two Years, ſo that young Plants ſhould be annually raiſed.

ASARUM. Aſarabacca.

The *Characters* are,

The Flower hath a thick Bell-ſhaped Empalement of one Leaf, which is coloured, and ſlightly cut at the Brim into three Parts, which are reflexed. It hath no Petals, but twelve ſhort Awl-ſhaped Stamina, crowned by oblong Summits, which are faſtened in the Middle to the Stamina; at the Bottom of the Empalement is incloſed a thick Germen, ſupporting a ſhort cylindrical Style, crowned by a reflexed Stigma, cut into ſix Parts. The Germen turns to a thick Capſule having ſix Cells, containing ſeveral oval Seeds.

The *Species* are,

1. ASARUM *foliis reniformibus obtuſis binis. Lin. Sp. Pl.* 442. Aſarabacca with Kidney-ſhaped Leaves, which have two blunt Points. Common Aſarabacca.

2. ASARUM *foliis reniformibus mucronatis. Lin. Sp. Plant.* 442. Aſarabacca with Kidney-ſhaped Leaves ending in a Point. *Canada* Aſarabacca.

3. ASARUM *foliis cordatis obtuſis glabris petiolatis. Flor. Virg.* 162. Aſarabacca with ſmooth blunt Heart-ſhaped Leaves having Foot Stalks. *Virginia* Aſarabacca, with round Piſtolochia Leaves marked like thoſe of Sowbread.

The 1ſt Sort hath thick fleſhy jointed Roots, which ſend out Fibres from every Part; the Leaves grow ſingly on ſhort Foot Stalks, ariſing immediately from the Root; theſe are Kidney-ſhaped, eared at the Foot Stalk, and rounded at the Top, where they are indented; theſe are ſmooth, and of a ſhining green Colour: The Flowers grow upon very ſhort Foot Stalks cloſe to the Ground, ſo are hid under the Leaves. They are compoſed of a Bell-ſhaped Empalement, of a worn-out purple Colour, cut into three at the Top, where it turns backward: In the Bottom is ſituated the Germen, attended by twelve ſhort Stamina, which afterward turns to a leathery Seed Veſſel, divided into ſix Cells, which contain ſeveral roundiſh Seeds.

The Leaves of the ſecond Sort are much larger than thoſe of the firſt, and ſtand on longer Foot Stalks; theſe are pointed and hairy. The Flowers like thoſe of the other Sort, grow cloſe to the Root, but are ſomewhat inclining to green on their Outſide, in all other Reſpects they agree.

The 3d Sort hath ſmooth blunt Heart-ſhaped Leaves, ſtanding on long Foot Stalks; theſe are veined and ſpotted on their upper Surface like thoſe of the autumnal Cyclamen; the Flowers are ſhaped like the others, but ſtand on longer Foot Stalks, and are of a darker purple Colour. Theſe flower in *April* and *May*, and their Seeds ripen in *July* and *Auguſt*.

The 1ſt of theſe Sorts is very common, and hath been found wild in ſome Parts of *England*, though but rarely; it delights in a moiſt ſhady Place, and is increaſed by parting the Roots in Autumn. This is the Sort which is uſed in Medicine. It is chiefly uſed for green Emeticks for Madneſs, and is a great Sternutatory; a ſmall Quantity of the Powder of the Leaves being mixed with Snuff, will occaſion violent Sneezings.

The Powder of this Herb has been ſtrongly recommended by the Inhabitants of *Norfolk*, for Cattle troubled with the late raging Diſtemper, which, if blown up their Noſtrils, will occaſion a violent Diſcharge from the Head by the Noſtrils; and this, they have affirmed, has cured great Numbers of Cattle, which were at the laſt Stage of the Diſtemper.

The *Canada* Sort is tolerably hardy, and will endure our common Winters in the open Ground, being rarely hurt but by great Froſts, or being planted in a wet Soil, which often occaſions the Roots to rot in Winter. This is propagated as the other.

The 3d Sort will live in the open Air in *England*, being ſeldom injured by Froſt; but if the Plants are too much expoſed to the Sun in Summer, they ſeldom thrive well; therefore they ſhould be planted in a Border where they may have only the Morning Sun, in which Situation they will ſpread and increaſe. Theſe two laſt Sorts grow naturally in ſeveral Parts of *North America*.

ASCLEPIAS; Hirundinaria, or Swallow-wort.

The *Characters* are,

The Flower hath an Empalement of one Leaf, cut into five acute Segments; the Petal is alſo of one Leaf, divided into five oval Parts which are reflexed; in the Center is ſituated five Nectariums which encompaſs the Parts of Generation; theſe have Horns turning toward the Stamina, which are joined in a truncated Body incloſed by five Scales, open every Way. There are five Stamina ſcarce viſible, which have five Summits, ſituated between the Nectariums, and incloſed by the Scales of the truncated Body. It hath two oval pointed Germen, ſupporting two ſhort Styles crowned by a ſingle Stigma. The Germen becomes two large oblong ſwelling Pods ending in a Point, which open with two Valves in one Cell, filled with compreſſed Seeds, lying over each other like Tiles on a Houſe, and crowned with a ſoft Down.

The *Species* are,

1. ASCLEPIAS *foliis ovatis acuminatis caule erecto umbellulis proliferis. Lin. Sp. Plant.* 216. Swallow-wort with oval ſharp pointed Leaves, an upright Stalk, and a proliferous Umbel. Swallow-wort with a white Flower.

2. ASCLEPIAS *foliis lanceolatis acutis caule ſupernè ſubvolubili. Lin. Sp. Plant.* 216. Swallow-wort with pointed Spear-ſhaped Leaves, and the upper Part of the Stalk twining. Swallow-wort with a black Flower.

3. ASCLEPIAS *foliis ovatis acutis caule infirmo, umbellis ſimplicibus.* Swallow-wort with oval pointed Leaves, a weak Stalk, and ſingle Umbels. Narrow leaved Swallow-wort with a yellowiſh Flower.

4. ASCLEPIAS *foliis revolutis linearibus verticillatis caule erecto. Lin. Sp. Plant.* 217. Swallow-wort with narrow twiſting Leaves growing in Whorles, and an upright Stalk. *Apocynum marianum erectum. Pluk. Mant.* 17. Upright Dogſbane of *Maryland*, with narrow Toad-flax Leaves and Flowers growing in an Umbel.

5. ASCLEPIAS *foliis ovalibus ſubtus tomentoſis caule ſimpliciſſimo umbellis nutantibus.* Swallow-wort with oval Leaves, which are downy on their under Side, a ſingle Stalk, and nodding Umbels. *Apocynum majus Syriacum erectum. Corn. Canad.* Greater upright *Syrian* Dogſbane.

6. ASCLEPIAS *foliis ovatis ſubtus piloſiuſculis caule ſimplici umbellis nectariiſque erectis. Lin. Sp. Plant.* 214. Swallow-wort with oval Leaves, hairy on their under Side, a ſingle Stalk, with upright Umbels and Nectariums.

Dogſbane with fine purple Flowers and upright Horns.

7. Asclepias *foliis ovatis ſubtus villoſis caule ſimplici umbellis erectis nectariis reſupinatis. Lin. Sp. Plant.* 214. Swallow-wort with oval Leaves, hairy on their under Side, a ſingle Stalk, and upright Umbels with inclining Nectariums. Upright Dogſbane of *New York*, with Leaves leſs hoary, and a worn out paliſh purple Flower.

8. Asclepias *foliis ovatis rugoſis nudis caule ſimplici umbellis ſubſeſſilibus pedicellis tomentoſis. Lin. Sp. Plant.* Swallow-wort with rough naked oval Leaves, a ſingle Stalk, Umbels growing cloſe to the Stalk, and woolly Foot Stalks. The old *American* Dogſbane called *Wiſank.*

9. Asclepias *foliis lanceolatis caule ſupernè diviſo umbellis terminalibus congeſtis. Lin. Sp. Plant.* 215. Swallow-wort with Spear-ſhaped Leaves, the upper Part of the Stalk divided and terminated by a cloſe Umbel. *Apocynum minus Canadenſe.* Smaller upright Dogſbane of *Canada.*

10. Asclepias *foliis villoſis caule decumbente. Lin. Sp. P.* Swallow-wort with hairy Leaves, and a declining Stalk. Hairy Orange-coloured Dogſbane of *Carolina.*

11. Asclepias *foliis alternis lanceolatis caule divaricato piloſo. Lin. Sp. Plant.* 217. Swallow-wort with Spear-ſhaped Leaves, growing alternately, and a hairy divided Stalk. Hairy *New England* Dogſbane with a tuberoſe Root, and an Orange-coloured Flower, commonly called Orange *Apocynum.*

12. Asclepias *foliis lineari-lanceolatis glabris caule fruticoſo umbellis lateralibus.* Swallow-wort with ſmooth, narrow, Spear-ſhaped Leaves, a ſhrubby Stalk, and Umbels coming out of the Sides. *Apocynum erectum Africanum. Par. Bat.* 23. Upright *African* Dogſbane with a hairy Fruit, and a narrow, ſmooth, Willow Leaf.

13. Asclepias *foliis lanceolatis glabris umbellis ſimplicibus lateralibus caule fruticoſo.* Swallow-wort with ſmooth Spear-ſhaped Leaves, ſingle Umbels coming from the Side of the Branches, and a ſhrubby Stalk. Upright *African* Dogſbane with a broad ſmooth Willow Leaf, and a hairy Fruit.

14. Asclepias *foliis lanceolatis villoſis acutis umbellis ſimplicibus erectis caule fruticoſo.* Swallow-wort with hairy Spear-ſhaped Leaves, which are pointed, ſingle upright Umbels, and a ſhrubby Stalk. Upright *African* Dogſbane with hairy Fruit, and a broad hairy Willow Leaf.

15. Asclepias *caule erecto fruticoſo, foliis ſubrotundis amplexicaulibus, umbellis congeſtis.* Swallow-wort with an upright ſhrubby Stalk, roundiſh Leaves embracing it, and cloſe Umbels. Upright-ſhrubby Dogſbane with a roundiſh Sea-green Leaf.

16. Asclepias *foliis lanceolatis glabris caule ſimplici umbellis erectis lateralibus ſolitariis. Lin. Sp. Plant.* 215. Swallow-wort with a ſingle Stalk, ſmooth Spear-ſhaped Leaves, and upright ſingle Umbels, proceeding from the Wings of the Leaves. *American* Dogſbane with longer Almond Leaves.

17. Asclepias *foliis lanceolatis petiolatis glabris caule ſimplici umbellis erectis ſolitariis. Lin. Sp. Plant.* 215. Swallow-wort with ſmooth Spear-ſhaped Leaves, having Foot Stalks, a ſingle Stalk, and upright ſingle Umbels. Dogſbane with a fibrous Root, and ſcarlet Petals with Saffron coloured Horns, called Baſtard *Ipecacuana.*

18. Asclepias *foliis amplexicaulibus oblongo-ovalibus. Flor. Zeyl.* 112. Swallow-wort with oblong oval Leaves, embracing the Stalks. Greater upright broad-leaved *Indian* Dogſbane, and the *Beid el oſſar. Alp. Ægypt.* 85.

19. Asclepias *foliis ovato-lanceolatis glabris caule ſimplici umbellis erectis terminalibus.* Swallow-wort with ſmooth oval Spear-ſhaped Leaves, a ſingle Stalk, terminated by upright Umbels. *Apocynum erectum foliis oblongis. Houſt. MSS.* Upright Dogſbane with oblong pointed Leaves, and white Flowers growing in an Umbel.

20. Asclepias *foliis oblongo-lanceolatis ſubhirſutis caule fruticoſo ſcandente umbellis lateralibus congeſtis.* Swallow wort with oblong Spear-ſhaped hairy Leaves, a ſhrubby climbing Stalk, and compact Umbels proceeding from the Side.

The 1ſt Sort is the common Swallow-wort of the Shops. This is called *Vincetoxicum & Hirundinaria*, in *Engliſh* Swallow-wort, or tame Poiſon, from its ſuppoſed Virtue, being accounted a mighty counter Poiſon. The Root is the only Part uſed, which is compoſed of many ſtrong Fibres, connected at the Top, like thoſe of Aſparagus, from which ariſe many Stalks, in Number proportional to the Size of the Roots; theſe grow near two Feet high, and are very ſlender at the Top; the Leaves are oval, ending in a Point, and placed oppoſite by Pairs. The Flowers are white, growing in Umbels near the Top of the Stalk, from which are ſent out ſmaller Umbels; the Flowers are of one Leaf, cut into five Parts, in the Center of which are placed five horned Nectariums, among which the Stamina and Styles are ſituated. After the Flower is paſt, the two Germen become two long pointed Pods, incloſing many compreſſed Seeds, crowned with a ſoft white Down. The Flowers appear in *June*, and the Seeds ripen in *September.* This Sort grows naturally in the South of *France*, *Spain*, and *Italy.*

The 2d Sort agrees with the 1ſt, in the Shape of its Roots, Leaves, and Flowers, but the Stalks extend to a greater Length, and toward their upper Part twiſt round any Sticks, or Plants near it; the Flowers are black, and appear in *June*; it ſeldom fails to ripen Seeds in *England.*

The 3d differs from both the other in the Narrowneſs of its Leaves, and Weakneſs of its Stalks; the Umbels of Flowers are ſingle, and of a yellow Colour. This flowers in *June*, and perfects Seeds in *England.* There is a Variety with broader Leaves, which may have come from the Seeds of this.

Theſe Plants are common in the *Engliſh* Gardens, and are all Natives of the ſame Countries. They are generally propagated by parting their Roots, eſpecially the 1ſt Sort, which ſeldom produces Seeds in *England.* The beſt Time for this is in Autumn, when their Stalks begin to decay. They ſhould not be planted nearer than three Feet, for the Fibres of their Roots extend to a conſiderable Diſtance. They are very hardy, ſo will thrive in any Situation, but love a dry Soil. Their Stalks die in Autumn, and new ones riſe in the Spring.

The 4th Sort grows naturally in *North America*, from whence the Seeds were brought to *Europe*; this riſes with ſlender upright Stalks, garniſhed with very narrow Leaves, growing in Whorles round the Stalks, at the Top of which grow Umbels of ſmall, white, ſtarry Flowers. Theſe appear in *July*, but are never ſucceeded by Pods in *England*, ſo are only propagated by parting the Roots in Spring, before they put out new Shoots. They ſhould be planted in a warm Border and dry Soil, and in Winter covered with old Tan, to prevent the Froſt from penetrating the Ground.

The 5th Sort creeps greatly at the Root, and will ſoon ſpread over a large Spot of Ground; it ſends up ſtrong Stems four Feet high, having thick oval Leaves placed oppoſite, and hoary on their under Sides. Towards the Top of the Stalks the Umbels of Flowers come out on the Side in *July*; theſe are of a worn out purple Colour, ſmelling ſweet, and nod downward; ſometimes theſe are ſucceeded by large oval Pods, filled with flat Seeds, crowned by a long ſoft Down. This is propagated by its creeping Root, and grows in any Soil or Situation. It may be tranſplanted any Time after the Stalks decay, and before the Roots ſhoot in the Spring.

The 6th Sort hath a perennial Root, which ſends up ſeveral upright Stalks in Spring, about two Feet high, garniſhed with oval Leaves growing oppoſite, at the Top of the Stalks the Umbels of Flowers are produced, of a bright purple Colour, making a pretty Appearance in *July*, but are not ſucceeded by Pods in *England*; this muſt be treated as the 4th Sort.

The 7th Sort grows naturally in *North America*. This hath a perennial Root, ſending out ſingle Stalks, near three Feet high, which have oval Leaves, hairy on their under Side, and placed oppoſite; the Flowers grow in erect Umbels at the Top, and the Nectariums declining. Theſe are of a worn out purple Colour reſembling thoſe of the 5th; it is very hardy, and propagates faſt by its creeping Roots, never producing Seeds in *England*. This grows in any Soil or Situation, and is tranſplanted when the Stalks decay.

The 8th Sort reſembles the 7th, but the Leaves are rough, and the Umbels of Flowers more compact, and come out on the Side of the Stalk; theſe are of an herbaceous Colour; it is propagated by Roots as the former Sort, never ripening Seeds in this Country.

The 9th Sort came firſt from *Canada*. It hath a perennial Root, which puts out ſeveral upright Stalks about two Feet high, which have oblong ſmooth Leaves placed by Pairs; at the Top are produced cloſe Umbels of purple Flowers; theſe appear in *Auguſt*, but do not produce any Seeds here, ſo is only propagated by parting the Roots, which do not increaſe very faſt, ſo is not very common; it is hardy enough to live Abroad, if planted in a dry Soil.

The 10th Sort is a Native of *North America*, but is hardy enough to live Abroad in *England*, if planted in a warm Situation, and dry Soil. This hath declining hairy Stalks, a Foot and a Half long; the Leaves are narrow, hairy, and placed oppoſite; the Umbels grow at the Extremity of the Branches, which are compact, and the Flowers are of a bright orange Colour. It is propagated by Seeds, which ſhould be ſown in Pots, and plunged into a moderate hot Bed to bring up the Plants, which ſhould be inured to the open Air ſo ſoon as the Weather will permit, for if they are drawn up weak, they ſeldom recover it. When they are of a proper Strength to remove, they ſhould be ſhaken out of the Pots, and planted in a warm Border ſix Inches aſunder, being careful to ſhade them from the Sun, until they have taken freſh Root, but they muſt have very little Water, for they are milky Plants, and rot with much Wet. During the Summer they muſt be kept clean from Weeds, and when their Stalks decay in Autumn, ſome rotten Tan ſhould be laid over the Ground to keep out the Froſt, which ſhould be removed in the Spring before the Plants put out new Shoots; the following Summer they will require no other Care than before, and the next Winter they muſt be covered as in the former. The ſecond Spring the Roots may be tranſplanted where they are to remain, the Roots will then be ſtrong enough to flower in Summer, and will laſt ſeveral Years, eſpecially if they are covered with Tan to keep out the Froſt, but they ſhould not be afterward removed; for when the Roots are large, they will not bear tranſplanting.

The 11th Sort is a Native of the ſame Countries, and is much like the former, but differs in having upright Stalks, and the Leaves growing alternate. The Roots of this grow to a large Size, ſo will not bear tranſplanting. It is propagated by Seeds, which ſhould be treated in the Manner directed for the former. Theſe flower the latter End of *July*, and *Auguſt*; and, in warm Seaſons, ſometimes ripen their Seeds in *England*, neither of theſe Plants will live long in Pots, for which Reaſon I have recommended their being planted in the full Ground; but they ſhould have a warm Situation.

The 12th, 13th, and 14th Sorts grow naturally at the *Cape of Good Hope*, from whence they were brought to *Holland*. I received Seeds of the 13th Sort from *Alexandria*.

Theſe riſe with upright ſhrubby Stems to the Height of ſeven or eight Feet, and divide into many Branches, thoſe of the 12th Sort are garniſhed their whole Length with long, narrow, ſmooth Leaves, ending in a Point; from the Wings of the Leaves the Umbels of Flowers are produced, upon long Foot Stalks; the Flowers are white, and grow looſely on the Umbel; theſe are frequently ſucceeded by ſhort, thick, ſwelling Pods, ending in a Point, thick ſet with Hairs, and filled with compreſſed Seeds, crowned with a ſoft Down. It flowers from *June* to *October*, and the Seeds ripen in Winter.

The 13th Sort differs from the 12th, in having much broader Leaves, which are of a darker green; the Umbels of Flowers are ſmaller, grow upon ſhorter Foot Stalks, and the ſingle Flowers are larger. This flowers at the ſame Time with the former.

The 14th Sort doth not riſe ſo high as either of the former, and the Branches grow at a much greater Diſtance; the Leaves are ſhorter, and covered on both Sides with ſhort Hairs. The Flowers grow in ſmall looſe Umbels, and are white; theſe appear in the ſame Seaſon with the former.

Theſe three are propagated by Seeds, which may be ſown in *April* on a Bed of light Earth in the open Air, and when the Plants are three or four Inches high, they ſhould be each planted in a ſmall Pot filled with light Earth, and ſhaded until they have taken new Root, then they may be placed with other exotic Plants in a ſheltered Situation; in *October* they muſt be removed into the Green-houſe, and during Winter ſhould have but little Water, for as they abound with a milky Juice, much Wet will rot them. The only Care theſe will require, is to ſhift them into larger Pots, as they advance in Growth, but Care ſhould be taken not to put them in Pots too large, and in the Summer to place them abroad with other Plants from the ſame Country.

Theſe 3 Sorts may alſo be propagated by Cuttings, which if planted in *July* or *Auguſt*, in a ſhady Border, will ſoon take Root, and may ſoon after be taken up and planted in Pots, and managed as the ſeeding Plants. The 13th Sort has lived in the open Air in mild Winters in the *Chelſea* Garden, but in cold Winters they are conſtantly deſtroyed.

The 14th Sort grows with an upright ſhrubby Stalk to the Height of ſix or ſeven Feet, dividing toward the Top into three or four Branches, garniſhed their whole Length with ſtiff roundiſh Leaves, which cloſely embrace them. Toward the upper Part, the Flowers are produced on their Sides, growing in ſhort compact Umbels of an herbaceous Colour, ſo make but little Appearance, and come out chiefly in Autumn and Winter. This grows naturally at the *Cape of Good Hope*, and requires the ſame Culture as the former Sorts. There is a Variety of this with deep green Leaves, ſuppoſed to be a different Species, but I have raiſed it from the ſame Seeds.

The 15th Sort grows naturally in the warm Parts of *America*; the Seeds were ſent me from *La Vera Cruz*. This riſes with ſingle Stalks near two Feet high, garniſhed with ſmooth Spear-ſhaped Leaves, ending in a Point; toward the Top of the Stalk the Umbels of Flowers are produced from the Wings of the Leaves, which are white, and ſtand erect; theſe are ſucceeded by oblong pointed Pods, filled with compreſſed Seeds, crowned with ſoft Down. It flowers in *June* and *July*, and the Seeds ripen in *October*.

This Plant is tender ſo muſt be raiſed in a hot Bed, and tranſplanted into Pots filled with rich Earth, and plunged into the Tan Bed in the Stove. It muſt have but little Water, and conſtantly remain in the Stove, otherwiſe the Plants will not thrive here.

The 16th Sort is alſo a Native of the warm Parts of *America*, the Roots of which have been ſent to *England* for *Ipecacuana*, from which it may be eaſily diſtinguiſhed by its Form; this being compoſed of a great Number of ſmall Fibres, whereas the true *Ipecacuana* hath jointed Roots, which run deep into the Ground, and are fleſhy. There have been many Accounts of the bad Effects of the Uſe of theſe Roots, as alſo of the poiſonous Quality of the Plant, ſo that the Publick ſhould be cautioned not to make uſe of it, and alſo to be careful no to let the milky Juice of the Plant mix it with any Thing which is taken inwardly.

This Plant riſes five or ſix Feet high, with upright Stems, which are garniſhed with ſmooth oblong Leaves, placed oppoſite; toward the Top of the Branches, the Umbels of Flowers come out, which are ſingle, and grow erect; the Petals of the Flowers are of a ſcarlet Colour; and the horny Nectariums in the Middle, of a bright Saffron Colour, which make a pretty Appearance; there is commonly a Succeſſion of Flowers on the ſame Plant, from *June* to *October*; they are ſucceeded by long taper Pods filled with Seeds crowned by a ſoft Down, which ripen late in Autumn.

It is propagated by Seeds, which muſt be ſown on a hot Bed in Spring; and the Plants treated in the ſame Manner as before directed for the former Sort; the Roots of this Sort may be continued three or four Years, but after the ſecond Year, the Plants grow naked, and do not produce ſo many Flowers, as before; ſo it is much better to raiſe young Plants to ſucceed them, eſpecially as they produce Plenty of Seeds in *England*.

The 17th Sort riſes with upright Stems, ſix or ſeven Feet high, garniſhed with thick oval Leaves placed oppoſite. The Umbels of Flowers are produced from the Wings of the Leaves, which are ſingle; the Flowers are white, of a Star figure, having five Points; the Pods of this Sort are very large, in Shape like an Ox's Teſticles, and filled with flat Seeds lying over each other, like Tiles on a Houſe. I received the Seeds from *India*.

This Plant is tender, ſo muſt be preſerved conſtantly in the Stove, and treated as the two former Sorts; it ſhould have very little Wet, eſpecially in the Winter.

The 18th Sort approaches near to the 15th, differing only in the Leaves being broader, and the Umbels of Flowers terminating the Stalks, whereas thoſe of the 15th are produced at the Wings of the Leaves. The Seeds were ſent me from *La Vera Cruz*. This is tender, ſo muſt be managed as the 15th Sort. It flowers in *Auguſt*, and the Seeds ripen in *October*.

The 19th Sort I received from *Carthagena*; this hath climbing Stalks, which faſten themſelves to the neighbouring Plants; and riſe to the Height of ten or twelve Feet; the Joints of the Stalks are pretty diſtant from each other; at each are produced two oblong, Spear-ſhaped, hairy Leaves, growing oppoſite upon very ſhort Foot Stalks; the Umbels of Flowers, come out from the Wings of the Leaves, which are very compact, and the Flowers are of a Sulphur Colour. Theſe appear in *Auguſt*, but have not been ſucceeded by Seeds in *England*.

This Plant is tender, ſo muſt be conſtantly preſerved in the Stove, and treated as the former Sorts.

ASCYRUM. *L. G. P. Hypericoides.* St. Peterſwort.

The *Characters* are,

The Empalement of the Flower is four leaved, the two outer being narrow and oppoſite; the two inner broad, Heart-ſhaped, and erect. The Flower hath four oval Petals, the two outer are large and placed oppoſite, the two inner ſmall. In the Center is ſituated an oblong Germen, with a very ſhort Style crowned by a ſingle Stigma. This is attended by a great Number of briſtly Stamina, joined at their Baſe in four Parts, and crowned with round Summits. The Germen becomes an oblong pointed Seed Veſſel, opening in two Valves, and filled with ſmall round Seeds. The Seed Veſſel is incloſed by the two large Leaves of the Empalement.

The *Species* are,

1. ASCYRUM *foliis ovatis caule tereti paniculâ dichotomâ. L. Sp. Pl.* St. Peterſwort with oval Leaves, a taper Stalk, and Flowers growing in looſe Spikes from the Diviſions of the Branches. *Hepericoides ex terra Mariana. Pluk. Mant.* 104. Baſtard St. Johnſwort of *Maryland*, with ſmall yellow Flowers called St. *Andrew*'s Croſs.

2. ASYCRUM *foliis hirſutis caule ſtricto L. S. P.* St. Peterſwort with hairy Leaves and a ſtiff ſlender Stalk. Shrubby hairy St. Johnſwort of *Virginia*.

3. ASCYRUM *foliis ovatis caule compreſſo L. S. P.* St. Peterſwort with oval Leaves, and a flatted Stalk. Upright ſhrubby Baſtard St. Johnſwort with a yellow Flower.

4. ASCYRUM *foliis ovatis minoribus, caule procumbente.* St Peterſwort with ſmall oval Leaves and a trailing Stalk. *Hepericoides fruteſcens.* Shrubby Baſtard St. Johnſwort, with a yellow Flower and trailing Branches.

The 1ſt Sort is a low Plant, whoſe Stalks ſeldom riſe more than ſix Inches high; theſe have ſmall oval Leaves, placed by Pairs; the Stalks are ſlender, and divide into two toward the Top. From between the Diviſion of the Branches, the looſe Spikes of Flowers are produced, which are yellow, but very ſmall, ſo make no Appearance; and the Plant is ſcarce worthy of a Place in Gardens, but for Variety. The Root is perennial, and the Plant may be propagated by laying down its Branches; it loves a moiſt Soil, and a ſhady Situation. This grows naturally in *North America*.

The 2d Sort grows about three Feet high, with upright Stalks, garniſhed with hairy oblong Leaves; the Flowers are produced at the Ends of the Stalks, of the Shape and Colour with common St. Johnſwort, but have only four Leaves. This hath a perennial Root, but the Stalks decay every Autumn. It may be propagated by parting the Roots in Autumn, when the Stalks decay, and ſhould be planted in a loamy Soil; it grows naturally in *Virginia* and ſome Years produces Seeds in *England*.

The 3d Sort grows naturally in *South Carolina*, from whence I received the Seeds. This Plant riſes a Foot and a Half high, with flat Stalks, garniſhed with oval ſmooth Leaves growing oppoſite; the Stalks are terminated by three or four yellow Flowers, growing cloſe together, larger than thoſe of the common St. Johnſwort, and the Petals of the Flowers are hollow. This Sort rarely produces Seeds in *England*, but it may be propagated by Cuttings, made of the young Shoots in *May*; which, if planted in Pots, and plunged into a very moderate hot Bed, will take Root in five or ſix Weeks, when they may be tranſplanted into a warm Border, where they will endure the Cold of our ordinary Winters; but in ſevere Froſts they are frequently deſtroyed, unleſs the Roots are covered with Tan to keep out the Froſt.

The 4th Sort hath many ſlender Branches which trail upon the Ground, theſe are garniſhed with ſmall oval Leaves, very little larger than thoſe of the Mother of Thyme; the Flowers are produced at the Ends of the Branches, in ſmall Cluſters, which are yellow, and compoſed of four ſmall Petals. This flowers in *Auguſt*, but never produces Seeds in *England*. It grows naturally in *South Carolina*, and in the *American* Iſlands.

Theſe Plants have little Beauty, ſo are ſeldom cultivated but in Botanick Gardens, for the Sake of Variety.

ASCYRUM BALEARICUM.
ASCYRUM MAGNO FLORE. } *See* Hypericum.
ASCYRUM VULGARE.

ASH TREE. *See* Fraxinus.

ASHES are eſteemed by ſome a good ſuperficial Dreſſing for Corn and Meadow Land, as they give a new Ferment to ſuch Lands as are in any Degree ſluggiſh and unactive, and enrich thoſe which are jejune and ſlow, being endowed with ſingular Qualities to make them prolifick.

All Sorts of Aſhes contain in them a very rich fertile Salt, and are the beſt Manure of any to lay upon cold wet Land; but then they ought to be kept dry, that the Rain may not waſh away their Salt. Experience has ſhewn, that the Aſhes of any Sort of Vegetable are very advantageous to Land, by the Improvement that has been made in moſt Places in *England*, by burning Bean Stalks, Fern, Furze, Heath, Sedge, Straw, Stubble, *&c.*

Coal Aſhes, or ſuch as are made of *Newcaſtle*, *Scotch*, and other Pit Coal, are much recommended by ſome; but the firſt are moſt approved of, becauſe they contain a greater Quantity of nitrous and ſulphureous Matter than the others, though the reſt are good.

There is no Dreſſing ſo good for Graſs Ground as Sea Coal Aſhes, eſpecially for cold wet Land; and where it is ſubject to Ruſhes or Moſs; for theſe will deſtroy both, and occaſion the Graſs to be much finer: This Dreſſing ſhould be laid on the Land early in Winter, otherwiſe it will do Harm the firſt Summer; for when they are laid on the Ground in the Spring, they will cauſe the Graſs to burn as ſoon as the Warmth comes on; whereas thoſe that were put on early enough to receive the Winter's Rain, will be waſhed into the Ground, before the warm Seaſon, whereby the Graſs will have the Benefit of it the firſt Year. Where the Land is poor and ſour, producing Ruſhes and Moſs only, there ſhould be at leaſt twenty Loads of Aſhes laid upon each Acre; for a ſlight Dreſſing will not anſwer the Deſign of killing Weeds and Moſs, nor will it be ſufficient to enrich Land which is cold and ſluggiſh, therefore it will be better to lay a good Dreſſing at firſt, than to do it at ſeveral Intervals; for one ſubſtantial Dreſſing will continue the Land longer in Heart than three ſlight ones, beſide the Advantage before mentioned.

But theſe ought to be applied ſuperficially, and not too near the Roots of Plants; and if ſo, there are few Plants but will receive Benefit by them, by their nitrous and ſulphureous Qualities being waſhed down by the Rain, which will open by the Strength of Water, and cauſe it to heave, in ſome Degree, as Lime will do when Water is thrown upon it.

Wood Aſhes are commended as the principal of ſuperficial Dreſſings for Land, in that they contain a vegetative Kind of Salt.

Kiln Aſhes, *i. e.* ſuch as are made of Straw, Furze, *&c.* are, by ſome, accounted as good as any of the ſpirituous Improvements of light Lands; but for ſuch as are heavy, they are looked upon as ſcarce ſolid and ponderous enough. Theſe Aſhes the Malſters, in the Weſt Country, ſift over their Corn and Graſs; which are ſuppoſed, by their Heat, to cauſe a Fermentation, a Hollowneſs and Looſeneſs in the Mould; by which Means, the Rains enter it more eaſily, and diſpoſe the Earth to Fruitfulneſs.

But theſe being light, ought never to be ſtrewed nor ſifted in windy Weather, becauſe they would be blown away; and if it could be ſo ordered as to be done juſt before Snow or Rain, it would be the better.

Soap Aſhes (after the Soap Boilers have done with them) are very proper for very cold and ſour Lands, and kill Weeds of all Sorts: Sir *Hugh Plat* mentions one at *Ware*, who having a Piece of Land over-run with Broom and Furze, manured it with Soap Aſhes, and had an incredible Crop of Wheat for ſix Years ſucceſſively.

Pot Aſhes, after the Pot Aſh Men have done with them, are eſteemed good for moſt Sorts of Land; but as moſt of the Salt has been drawn off by the Lee, they ought to be laid on much thicker than other Aſhes.

Turf Aſhes are very good for all, but eſpecially Clay Lands; they will be much better if mixed with Lime.

All theſe Aſhes ought to be kept dry, from the Time they are made till they are uſed, elſe the Rains will both waſh away their Goodneſs, and alſo make them clod, eſpecially ſome of the laſt mentioned, which will prevent their ſpreading.

And beſides, one Load of Aſhes that has been kept dry, will go as far as two that have been expoſed to the Rain: And Coal Aſhes, if moiſtened with Chamber-lye or Soap-ſuds, will greatly add to their Strength.

All calcined Vegetables cauſe a fiery Heat and Vegetation, and, when Wet comes, ſet the Ground to work; by a ſubtle Inſinuation unlocking the Clods, and quickening the Sluggiſhneſs of the Earth; according to that eſtabliſhed Maxim among Naturaliſts, *That all Fermentation is cauſed by the Interpoſition or Mixture of different Qualities one from the other.*

It is after this Manner that Coal Aſhes operate ſo admirably in looſening and mouldering ſtiff clayey Grounds, and, as it is uſually termed, making it rough, aſhy, or ſandy-like: And after the ſame Manner, Sand mixed with Clay does well, eſpecially when it is impregnated with ſaline Qualities.

ASPALATHUS. *Lin. Gen. P.* 767. *African* Broom.

The *Characters* are,

The Flower hath an Empalement of one Leaf, which is cut into five equal Segments at the Top; the Flower is of the Butterfly Kind. The Standard is hairy, compreſſed, and blunt pointed; the Wings are blunt, Moon-ſhaped, and ſpread open, being ſhorter than the Standard; the Keel is bifid, and of the ſame Length as the Wings. It hath ten Stamina, nine of which are joined and covered by the Standard, the other ſtanding ſeparate; theſe are crowned by ſingle oblong Summits. In the Bottom is ſituated an oval Germen ſupporting a ſingle Style, crowned by a pointed Stigma. The Germen afterward becomes an oval oblong Pod, incloſing one or two Kidney-ſhaped Seeds.

The *Species* are,

1. ASPALATHUS *foliis confertis ſubulatis mucronatis hiſpidis floribus capitatis. Lin. Sp. Plant.* 711. *Aſpalathus* with rough pointed Awl-ſhaped Leaves growing in Cluſters, and Flowers in Heads. *Geniſta Africana.* Yellow *African* Broom, with hairy Flowers collected in woolly Heads, and prickly Aſparagus Leaves which are hairy.

2. ASPALATHUS *foliis quinatis ſeſſilibus. Lin. Sp. Plant.* 712. Five leaved *Aſpalathus* growing cloſe to the Branches. *Dorycnium Indicum. Indian* ſhrubby Trefoil, with ſingle red Flowers, an oblong Foot Stalk, and a ſmall Pod.

3. ASPALATHUS *foliis trinis linearibus ſericeis ſtipulis ſimplicibus mucronatis floribus ſparſis tomentoſis. Lin. Sp. Plant.* 713. *Aſpalathus* with three narrow ſilky Leaves, ſingle pointed Huſks, and woolly Flowers growing thinly. Narrow leaved *African* ſilvery *Cytiſus*, with a ſilky Down and Flowers in a Spike like a Hare's Foot.

Theſe Plants grow naturally about the *Cape of Good Hope*, from whence I received their Seeds. The 1ſt is a low Shrub growing about three Feet high, with ſlender Branches, garniſhed with many trifoliate Leaves growing in Cluſters, which are Awl-ſhaped, pointed, and rough; at the Ends of the Branches the Flowers come out, which are yellow, collected in woolly Heads; theſe are rarely ſucceeded by Pods in *England.* It is propagated by Seeds, which muſt be obtained from the *Cape*, and ſhould be ſown in Pots filled with light Earth as ſoon as they arrive: If this happens in Autumn, the Pots ſhould be plunged into an old Tan Bed whoſe Heat is ſpent, where they may remain till Spring, when they ſhould be removed into a moderate hot Bed, which will bring up the Plants. But when the Seeds arrive in Spring, the Pots in which the Seeds are ſown ſhould be then plunged into a moderate hot Bed; and in warm Weather the Glaſſes muſt be ſhaded in the Middle of the Day, and the Pots frequently refreſhed with Water. Thoſe Seeds which are ſown in Spring, ſeldom grow the ſame Year; therefore in the Autumn, the Pots ſhould be put into an old Tan Bed, as was directed for thoſe ſown in Autumn, and afterward put on a hot Bed the following Spring. When the Plants come up, and are ſtrong enough to remove, they ſhould be each planted into a ſeparate ſmall Pot filled with light Earth, and plunged into a moderate hot Bed, to encourage their Rooting again; and when eſtabliſhed in the Pots, they ſhould by Degrees be inured to the open Air, into which they ſhould be removed in Summer, placing them in a ſheltered Situation, where they may remain till Autumn, when they muſt be carried into the Green-houſe, and in Winter ſhould have but little Water.

The 2d Sort grows about 5 Feet high, with ſlender Branches, garniſhed with Leaves growing by fives cloſe to the Branches; the Flowers come out ſingly upon long Foot Stalks, of a pale red Colour; theſe appear in *Auguſt*, but ſeldom are ſucceeded by Pods here. This is propagated and treated as the former.

The 3d Sort riſes about four Feet high, with a ſhrubby Stalk dividing into ſlender Branches, which are garniſhed with ſilky white Leaves, coming out by threes; the Flowers are yellow, downy, and grow thinly on the Branches. This is propagated by Seeds, and muſt be treated as the firſt Sort. It flowers late in Summer.

ASPARAGUS, corruptly called Sparrowgraſs.

The *Characters* are,

The Flower is naked, having no Empalement, and is of the Bell-ſhaped Kind, compoſed of ſix Leaves, with an erect Tube, but are ſpread open and reflexed at the Top. Theſe are male and hermaphrodite, ſometimes in different Plants, and at other Times on the ſame Stalks. The hermaphrodite Flowers have in their Center a roundiſh three cornered Germen, with a ſhort Style crowned by a prominent Stigma; this is attended by ſix ſlender Stamina, crowned by round Summits, which are not ſo long as the Petals of the Flower. The Germen becomes a round Berry having three Cells, in each of them is lodged one or two Seeds, ſmooth outward, but angular on their Inſide. The male Flowers have ſix Stamina, but no Germen or Style, nor are ſucceeded by any Berries.

The *Species* are,

1. ASPARAGUS *caule herbaceo erecto, foliis ſetaceis, ſtipulis paribus. Flor. Succ.* 272. Aſparagus with an upright herbaceous Stalk, briſtly Leaves, and equal Stipula. *Aſparagus Sativa. C. B. P.* Garden Aſparagus.

2. ASPARAGUS *caule inermi herbaceo foliis teretibus longioribus faſciculatis.* Aſparagus with a ſmooth herbaceous Stalk, and longer taper Leaves growing in Cluſters. Maritime Aſparagus with a thicker Leaf.

3. ASPARAGUS *foliis aciformibus pungentibus caule fruticoſo inermi. Sauv. Monſp.* 45. Aſparagus with prickly Leaves and a ſhrubby ſmooth Stalk.

4. ASPARAGUS *aculeis ſolitariis ramis flexuoſis foliis brevioribus faſciculatis.* Aſparagus with ſingle Spines, flexible Branches, and ſhorter Leaves growing in Cluſters.

5. ASPARAGUS *aculeis ſolitariis ramis reflexis retrofractiſque, foliis faſciculatis. Lin. Sp. Plant.* 313. Aſparagus with ſingle Spines, reflexed Branches, and Leaves growing in Cluſters. Narrow leaved *African* Aſparagus.

6. Asparagus *aphyllus ſpinis faſciculatis inæqualibus divergentibus. Hort. Cliff.* 122. Aſparagus without Leaves, and unequal Spines growing in Cluſters, which ſpread from each other.

7. Asparagus *caule inermi ramis declinatis foliis ſetaceis. Prod. Leyd.* 29. Aſparagus with a ſmooth Stalk, declining Branches, and briſtly Leaves.

8. Asparagus *aculeis ſolitariis caule erecto foliis faſciculatis, ramis filiformibus. Lin. Sp. Plant.* 313. Aſparagus with ſingle Spines, an upright Stalk, Leaves growing in Cluſters, and very ſlender Branches.

9. Asparagus *ſpinis lateralibus terminalibuſque, ramis aggregatis foliis faſciculatis. Lin. Sp. Plant.* 314. Aſparagus with Spines growing on the Sides and Ends of the Branches, which are in Bunches, and Leaves coming out in Cluſters.

10. Asparagus *foliis ſolitariis lineari lanceolatis caule flexuoſo aculeis recurvis. Flor. Zeyl.* 124. Aſparagus with ſingle narrow Spear-ſhaped Leaves, a flexible Stalk, and recurved Spines. Great prickly Aſparagus of *Ceylon*, with buſhy Stalks.

The 1ſt Sort is the common Aſparagus, which is cultivated for the Uſe of the Table, and may have probably been brought by Culture to the Perfection it now is, from the wild Sort, which grows naturally in the Fens of *Lincolnſhire*, where the Shoots are no larger than Straws; but if ſo, it muſt have been from very long Culture and good Management; for a Friend of mine, who procured ſome Seeds of the wild Sort, which he cultivated with great Care, in very rich Ground, yet could not bring the Roots to produce Shoots more than half the Size of the Garden Kind, which grew on the ſame Ground; but he always found the wild Sort came up a Week or ten Days earlier in the Spring, and the Shoots were exceeding ſweet.

The Aſparagus is propagated by Seeds, which ſhould be procured from a Perſon of Skill, who may be depended upon for Integrity in ſupplying with his beſt Seeds. But where a Perſon is in Poſſeſſion of ſome good Beds of Aſparagus, it is much the beſt Way to ſave it himſelf; in order to which, a ſufficient Number of the faireſt Buds ſhould be marked early in the Spring, and permitted to run up for Seeds; becauſe thoſe which run up after the Seaſon for cutting the Aſparagus is over, are generally ſo backward, as not to ripen the Seeds unleſs the Summer is warm, and the Autumn very favourable. In the Choice of the Buds to be left for Seeds, great Regard muſt be had to their Size and Roundneſs, never leaving any that are inclinable to be flat, or that ſoon grow open headed, always chooſing the roundeſt, and ſuch as have the cloſeſt Tops. But as ſeveral of theſe produce only male Flowers which are barren, ſo a greater Number of Buds ſhould be left, than might be neceſſary, if there could be a Certainty of their being all fruitful, but this never happens. When the Buds are left, it will be proper to thruſt a Stake down by each, being careful in doing this, not to injure the Crown of the Root. Theſe Stakes will not only ſerve as Marks to diſtinguiſh them from the others when they are all run up, but alſo to faſten the Shoots to, when they are advanced in Height, and put out lateral Branches, to prevent their being broken by Wind; which frequently happens where this is not obſerved, before the other Shoots are permitted to run up, after which there is little Danger of it, becauſe they will then be ſcreened by the other Stalks. Toward the End of *September* the Berries will be fully ripe, when the Stalks ſhould be cut off, and the Berries ſtripped into a Tub, in which they may remain three Weeks or a Month to ſweat, which will rot the outer Huſks; then fill the Tub with Water, and with your Hands break all the Huſks by ſqueezing them between your Hands. Theſe Huſks will all ſwim upon the Water, but the Seeds will ſink to the Bottom; ſo that by pouring off the Water gently, the Huſks will be carried along with it; and by putting freſh Water two or three Times, and ſtirring your Seed about, you will make it entirely clean: Then ſpread the Seed upon a Mat or Cloth, and expoſe it to the Sun and Air in dry Weather, until it is perfectly dry; when you may put it into a Bag, and hang it up in a dry Place till the Beginning of *February*; at which Time you muſt prepare a Bed of good rich Earth made very level, whereon you muſt ſow your Seeds (but not too thick, which will cauſe your Plants to be ſmall); then tread the Bed all over to bury the Seed in the Ground, and rake it over ſmooth.

The following Summer, keep it diligently cleared from Weeds, which will greatly add to the Strength of your Plants; and toward the End of *October*, when the Haulm is quite withered, ſpread a little rotten Dung over the Surface of the Ground, about an Inch thick, to preſerve the young Buds from being hurt with Froſts, *&c.*

The Spring following, your Plants will be fit to put out for good (for I would never chooſe Plants of more than one Year's Growth, having very often experienced them to take much better than older, and to produce finer Roots): You muſt therefore prepare your Ground by trenching it well, burying a good Quantity of rotten Dung at the Bottom of each Trench, that it may lie at leaſt ſix Inches below the Surface of the Ground; then level your whole Plot very exactly, taking out all large Stones: But this ſhould not be done long before you intend to plant your Aſparagus, in which you muſt be governed according to the Nature of your Soil or the Seaſon; for if your Soil is dry and the Seaſon forward, you may plant early in *March*; but in a very wet Soil, it is better to wait till the End of that Month, or the Beginning of *April*, which is about the Seaſon that the Plants are beginning to ſhoot. I know many People have adviſed planting Aſparagus at *Michaelmas*, but this I have experienced to be very wrong; for in two different Years I was obliged to tranſplant large Quantities at that Seaſon, but I had better have thrown away the Plants, for upon Examination in the Spring, I found moſt of the Roots were grown mouldy, and decaying; and I am ſure, not one in five ſucceeded, and thoſe which did were ſo weak, as not to be worth their ſtanding.

The Seaſon being now come, you muſt with a narrow pronged Dung Fork, carefully fork up your Roots, ſhaking them out of the Earth, and ſeparating them from each other; obſerving to lay their Heads even, for the more convenient planting them, which muſt be performed in this Manner:

Your Plot of Ground being leveled, you muſt begin at one Side thereof, ranging a Line very tight croſs the Piece; by which you muſt throw out a Trench exactly ſtrait, and about ſix Inches deep, ſo as not to turn up the Dung, into which you muſt lay your Roots, ſpreading them with your Fingers, and placing them upright againſt the Back of the Trench, that the Buds may ſtand forward, and be about two Inches below the Surface of the Ground, and at twelve Inches Diſtance from each other; then, with a Rake, draw the Earth into the Trench again, laying it very level, which will preſerve the Roots in their right Poſition; then remove your Line a Foot farther back, and make another Trench in like Manner, laying therein your Plants as before directed, and continuing the ſame Diſtance Row from Row; only obſerving between every four Rows, to leave a Diſtance of two Feet four Inches for an Alley to go between the Beds to cut the Aſparagus, *&c.*

Your Plot of Ground being finiſhed and levelled, you may ſow thereon a ſmall Crop of Onions, which will not hurt your Aſparagus, and tread in your Seeds, raking your Ground level.

There are ſome Perſons who plant the Seeds of Aſparagus in the Place where the Roots are to remain, which is a very good Method, if it is performed with Care. The Way is this: After the Ground has been well trenched and dunged, they lay it level, and draw a Line croſs the Ground (in the ſame Manner as is practiſed for planting the young Plants); then with a Dibble make Holes at a Foot Diſtance, into each of which you muſt drop two Seeds, for Fear one ſhould miſcarry; theſe Holes ſhould not be more than half an Inch deep; then cover the Seeds, by ſtriking the Earth in upon it, and go on removing the Line a Foot back for another Row; and after four Rows are finiſhed, leave a Space for an Alley between the Beds, if it is deſigned to ſtand for the natural Seaſon of cutting; but if it is to be taken up for hot Beds, there may be ſix Rows planted in each Bed, and the Diſtance in the Rows need not be more than nine Inches. This ſhould be performed by the Middle of *February*, becauſe the Seeds lie long in the Ground; but if Onions are intended to be ſown upon the Ground, that may be performed a Fortnight or three Weeks after, provided the Ground is not ſtirred ſo deep as to diſturb the Aſparagus Seeds, in raking the Onion-Seed into the Ground.

As the Roots of Aſparagus always ſend forth many long Fibres which run deep into the Ground, ſo when the Seeds are ſown where they are to remain, theſe Roots will not be broken or injured, as thoſe muſt be which are tranſplanted; therefore they will ſhoot deeper into the Ground, and make much greater Progreſs, and the Fibres will puſh out on every Side, and cauſe the Crown of the Root to be in the Center; whereas in tranſplanting, the Roots are made flat againſt the Side of the Trench.

When your Aſparagus is come up, and the Onions have raiſed their Seed Leaves upright (which will be in a Month or ſix Weeks after planting), you muſt with a ſmall Hoe cut up all the Weeds, and thin your Crop of Onions where they may have come up in Bunches: But this muſt be done carefully, and in dry Weather, that the Weeds may die as faſt as they are cut, being careful not to injure the young Shoots of Aſparagus, alſo to cut up the Onions which grow near the Shoots. This Work muſt be repeated about three Times, which, if well done, and the Seaſon not too wet, will keep the Ground clear from Weeds until the Onions are fit to be pulled up, which is commonly *Auguſt*, and is known when their Greens fall down and begin to wither. When you have drawn off your Onions, you muſt clean your Ground well from Weeds, which will keep it clean till you earth the Beds; this muſt be done in *October*, when the Haulm begins to decay; for if you cut the Haulm while green, the Roots will ſhoot freſh again, which will greatly weaken them. This young Haulm ſhould be cut off with a Knife, leaving the Stems two or three Inches above Ground, which will be a Guide to diſtinguiſh the Beds from the Alleys; then with a Hoe clear off the Weeds into the Alleys, and dig up the Alleys, burying the Weeds in the Bottom, and throw the Earth upon the Beds, ſo that the Beds may be about five Inches above the Level of the Alleys: Then you may plant a Row of Coleworts in the Middle of the Alleys, but do not ſow or plant any Thing upon the Beds, which would greatly weaken your Roots; nor would I ever adviſe the planting Beans in the Alleys (as is practiſed by many); for it greatly damages the two Outſide Rows of Aſparagus. In this Manner it muſt remain till Spring, when you muſt hoe the Beds to deſtroy all young Weeds; then rake them ſmooth, and obſerve all the ſucceeding Summer to keep them clear from Weeds; in *October* dig up the Alleys again, as before directed, earthing the Beds, *&c.*

The 2d Spring after planting, you may begin to cut ſome of your Aſparagus, though it will be much better to ſtay until the 3d; therefore now you muſt fork up your Beds with a flat pronged Fork, made on Purpoſe, which is commonly called an Aſparagus Fork: This muſt be done before the Buds ſhoot in the Spring, and with Care, leſt you fork too deep, and bruiſe the Head of the Root; then rake the Beds over ſmooth, juſt before the Buds appear above Ground, which will deſtroy all young Weeds, and keep your Beds clean much longer than if left unraked, or done ſo ſoon as forked; and when your Buds appear about four or five Inches above Ground, you may then cut them, but it ſhould be done ſparingly, only taking the large Buds, and ſuffering the ſmall to run up to ſtrengthen the Roots; for the more you cut, the greater will be the Increaſe of Buds, but they will be ſmaller and the Roots ſooner decay. When you cut a Bud, open the Ground with your Knife (which ſhould be very narrow and long in the Blade, and filled with Teeth like a Saw) to ſee whether any more young Buds are coming up cloſe by it, which might be either broken or bruiſed in cutting the other, then with your Knife ſaw it off about three Inches under Ground. This may appear very troubleſome to People unacquainted with the practical Part, but thoſe who are employed in cutting Aſparagus, will perform a great deal of this Work in a ſhort Time; but Care in doing this is abſolutely neceſſary to be obſerved by all who cut Aſparagus.

The Manner of dreſſing your Aſparagus Beds is every Year the ſame as directed for the 2d, *viz.* keeping them from Weeds, digging the Alleys in *October*, and forking the Beds toward the End of *March*, *&c.* only obſerve every other Year to lay ſome rotten Dung (from a Melon or Cucumber Bed) all over your Beds, burying ſome in the Alleys alſo, at the Time for digging them up. This will preſerve the Ground in Heart to maintain your Roots in Vigour, and by this Management, a Plot of good Aſparagus may be continued for ten or twelve Years in cutting, and will produce good Buds, eſpecially if it is not cut too long each Seaſon; for when it is not left to run up pretty early in *June*, the Roots will be greatly weakened, ſo the Buds will be ſmaller: Therefore, in thoſe Families where Aſparagus is required late in the Seaſon, a few Beds ſhould be ſet apart for that Purpoſe, which will be much better than to injure the whole Plantation, by cutting it too long.

I cannot help taking Notice of a common Error that has long prevailed, which is, that of not dunging the Ground for Aſparagus, believing that the Dung communicates a ſtrong rank Taſte to the Aſparagus; which is a great Miſtake, for the ſweeteſt Aſparagus is that which grows upon the richeſt Ground, and poor Ground occaſions that rank Taſte, ſo often complained of; the Sweetneſs of Aſparagus being occaſioned by Quickneſs of its Growth; which is always proportionable to the Goodneſs of the Ground, and the Warmth of the Seaſons: In order to prove this, I planted two Beds of Aſparagus, upon Ground which had Dung laid a Foot thick; theſe Beds were every Year dunged extremely thick, and the Aſparagus produced from theſe Beds was much ſweeter than any I could procure, though they were boiled together in the ſame Water.

The Quantity of Ground neceſſary to be planted with Aſparagus, to ſupply a ſmall Family, ſhould be at leaſt eight Rods, leſs than that will not do; for if you cannot cut one hundred at a Time, it will ſcarcely be worth while; for you muſt be obliged to keep it after it is cut two or three Days, to furniſh enough for one Meſs; but for a larger Family, ſixteen Rods ſhould be planted, which, if a good Crop, will furniſh two or three hundred each Day in the Height of the Seaſon.

But as there are ſeveral People who delight in having early Aſparagus, which is become a very great Trade in the Kitchen Gardens near *London*, I ſhall give proper Directions for the obtaining it any Time in Winter.

You muſt firſt be provided with a Quantity of good Roots (either of your own raiſing, or purchaſed from ſuch Gardeners as plant for Sale), that have been two or three Years planted out from the Seed Bed; and having fixed upon the Time you would willingly have your Aſparagus fit to cut, about ſix Weeks before, you ſhould prepare a Quantity of new Stable Horſe Dung, which ſhould be thrown in a Heap for a Week or more, to ferment, mixing ſome Sea Coal Aſhes with it; then it ſhould be turned over into a Heap, where it muſt lie another Week, when it will be fit for Uſe. Then dig out a Trench in the Ground where you intend to make the Bed, the Width of the Frames that are deſigned to cover it, and the Length in Proportion to the Quantity you intend to have (which if deſigned only to ſupply a ſmall Family, three or four Lights at a Time will be ſufficient): Then lay down your Dung into the Trench, working it very regularly, and beat it down very tight with a Fork, laying it at leaſt three Feet in Thickneſs or more, when the Beds are made in *December*; then put your Earth thereon about ſix Inches thick, breaking the Clods and laying it level; and at one End, begin laying your Roots againſt a little Ridge of Earth, raiſed about four Inches high: Your Roots muſt be laid as cloſe as poſſible one to the other, in Rows, with their Buds ſtanding upright; and between every Row lay a ſmall Quantity of fine Mould, obſerving to keep the Crown of the Roots exactly level. When you have finiſhed laying your Bed with Roots, you muſt lay ſome ſtiff Earth up to the Roots, on the Outſides of the Bed, which are bare, to keep them from drying; and thruſt two or three ſharp pointed Sticks, about two Feet long, down between the Roots, in the Middle of the Bed, at a Diſtance from each other. The Uſe of theſe Sticks is to let you know what Temper of Heat your Bed is in, which you may find by drawing up the Sticks, and feeling the lower Part; and if, after the Bed has been made a Week, you find it doth not heat, you may lay a little Straw or Litter round the Sides, or upon the Top, which will greatly help it; and if you find it very hot, ſo as to endanger ſcorching the Roots, it will be adviſeable to let it remain wholly uncovered, and to thruſt a large Stick into the Dung, on each Side of the Bed, in two or three Places, to make Holes for the great Steam of the Bed to paſs off, which in a ſhort Time will reduce the Bed to a moderate Heat.

After your Bed has been made a Fortnight, you muſt cover the Crowns of the Roots with fine Earth, about two Inches thick; and when the Buds appear above Ground through that Earth; you muſt again lay on a freſh Parcel, about three Inches thick; ſo that in the whole, it may be five Inches above the Crowns of the Roots, which will be ſufficient.

Then make a Band of Straw (or long Litter), about four Inches thick, which you muſt faſten round the Sides of the Bed, that the upper Part may be level with the Surface of the Ground: This muſt be faſtened with ſtrait Sticks about two Feet long, ſharpened at the Points, to run into the Bed; and upon this Band you muſt ſet your Frames, and put your Glaſſes thereon; but if, after your Bed hath been made three Weeks, you find the Heat decline, you muſt lay a good Lining of freſh hot Dung round the Sides of the Bed, which will renew the Heat; and in bad Weather, as alſo every Night, keep the Glaſſes covered with Mats and Straw; but in the Day Time, let it be all taken off, eſpecially whenever the Sun appears; which, ſhining through the Glaſſes, will give a good Colour to the Aſparagus.

A Bed thus made, if it works kindly, will begin to produce Buds, for cutting, in about five Weeks, and will hold about three Weeks in cutting; which, if rightly planted with good Roots, will produce, in that Time, about three hundred Buds in each Light; ſo that, if you would continue your Aſparagus until the Seaſon of the Natural being produced, you muſt make a freſh Bed every three Weeks, until the Beginning of *March*, from the Time your firſt Bed was made; for if your laſt Bed is made about a Week in *March*, it will laſt till the Seaſon of natural Aſparagus; and the laſt Beds will come a Fortnight ſooner to cut than thoſe made about *Chriſtmas*; and the Buds will be larger, and better coloured, as they will then enjoy more of the Sun.

If you intend to follow this Method of forcing early Aſparagus, you muſt plant every Year a Quantity, which you ſhall judge neceſſary (unleſs you intend to buy the Roots from ſome other Garden); the Quantity of Roots neceſſary to plant one Light, is commonly known by the Meaſure of the Ground where they grow; for in a good Crop, where few Roots are miſſing, one Rod of Ground will furniſh enough for a Light; but this Calculation is made from the Ground planted with Roots, which are deſigned to be taken up after two or three Years Growth for forcing, in which, there are ſix Rows in a Bed, at but ten Inches Diſtance, and the Plants 8 or 9 Inches aſunder in the Rows, but where there is a greater Space between the Rows, and fewer Rows in a Bed, then there muſt be a greater Quantity of Ground allotted for each Light. Moſt of the Kitchen Gardeners about *London*, take up their Aſparagus Roots after two Years Growth, from planting; but where the Land is not very good, it will be better to let it have three Years Growth, for if the Roots are weak, the Buds of Aſparagus will be very ſmall, ſo not worth the Trouble of forcing. The beſt Ground for planting Aſparagus, to have large Roots for hot Beds, is a low moiſt rich Soil; but for thoſe that are to remain for a natural Produce, a freſh ſandy Loam, when well dunged, is preferable to any other.

The 2d Sort is mentioned to grow naturally in *Wales*, and alſo near *Briſtol*, but this I have great Doubts about; for thoſe who have mentioned it, ſay it does not differ from the Garden Kind, which is only altered by Culture. But I have lately received Specimens of this, which were gathered near *Montpelier*, by which I am convinced that it is a different Species from that which grows in *Wales*, for the Leaves of the wild maritime Kind, are taper and thick, and are thinly placed on their Branches, nor do the Stalks branch out ſo much. Upon comparing theſe Specimens with one which I had dried ſome Years ago, which grew in the Garden at *Chelſea*, from Seeds which were ſent me from *Gibraltar*, I found them to be the ſame; but thoſe Plants were too tender to live abroad in this Country, for they were killed by a ſevere Froſt the ſecond Winter after they came up, though the Surface of the Ground was covered with Dung; and Mr. *Magnol* of *Montpelier*, was of Opinion that it was a different Species, for he ſays, the common wild Aſparagus and this grew near each other in the Neighbourhood of *Montpelier*, and the young Shoots of the former were ſweet, whereas thoſe of the latter were bitter. The ſame has been confirmed to me by ſeveral Gentlemen, who have reſided many Years at *Gibraltar* and *Minorca*, where the 2d Sort grows naturally in Plenty.

This Sort is propagated by Seeds in the ſame Manner as the Garden Kind, but muſt have a warmer Situation, and the Roots ſhould be well covered in Winter, to prevent the Froſt from penetrating the Ground.

The 3d Sort hath white crooked ſhrubby Stalks, which riſe 4 or 5 Feet high, but have no Spines on them; the Leaves come out in Cluſters from the ſame Point, like thoſe of the Larch Tree; theſe are very ſhort, and end in ſharp Prickles, ſo that they are troubleſome to handle. This Sort grows naturally in the South of *France*, *Spain*, and *Portugal*. It is propagated by Seeds as the former Sorts, but is too tender to live abroad in *England*, ſo the Roots ſhould be planted in Pots, and ſheltered in Winter.

The 4th Sort grows with ſhrubby Stalks, 3 or 4 Feet high, with very white Bark, and are armed with Thorns which are ſingle, coming out juſt below each Tuft of Leaves. Theſe Stalks continue ſeveral Years, and put out many Branches, which are garniſhed with narrow ſhort Leaves. Theſe continue green all the Winter, if the Plants are ſcreened from ſevere Froſt.

It is propagated by Seeds as the former, which may be procured from the *Mediterranean*, where it grows naturally; ſome of the Plants ſhould be kept in Pots, that they may be ſheltered in Winter, and the others may be planted in the full Ground in a warm Situation, and in hard Froſts covered, otherwiſe it will not live abroad in this Country.

The 5th Sort grows naturally at the *Cape of Good Hope*. This hath very crooked irregular Stalks, which riſe 8 or 10 Feet high, and are ſhrubby, putting out ſeveral Side Branches, which are weak. Theſe are garniſhed with long narrow Leaves coming out in Cluſters like thoſe of the Larch Tree; under each of theſe Cluſters is placed a ſingle ſharp Thorn. The Stalks continue ſeveral Years, and the Leaves keep green all the Year. This Sort is commonly propagated by parting the Roots, becauſe the Plants rarely produce Seeds in this Country, the beſt Time for this is in *April*. The Roots muſt be planted in Pots, and removed into the Green-houſe in Autumn.

The 6th Sort grows naturally in *Spain*, *Portugal*, and *Sicily*, in rocky Places. This ſends up many weak irregular Shoots, which have no Leaves, but inſtead thereof, are armed with ſhort ſtiff Thorns, which come out 4 or 5 together from the ſame Point, and ſpread from each other every Way. The Flowers are ſmall, of an herbaceous Colour; the Berries are larger than thoſe of the common Sort, and are black when ripe. This is tender, ſo muſt be treated as the 3d Sort.

The 7th Sort grows naturally at the *Cape of Good Hope*. I received it from Dr. *Van Royen*, Profeſſor of Botany at *Leyden*. This ſends up from the Root ſeveral ſlender Stalks, which put out weak Branches, declining downward; theſe are cloſely garniſhed with briſtly Leaves, like thoſe of Garden Aſparagus, which continue green through the Year. It hath not produced Seeds in *England*, ſo is only propagated by parting the Roots, as the fifth Sort, and treated in the ſame Manner.

The 8th Sort grows naturally at the *Cape of Good Hope*; this ſends up many weak Shoots growing in Cluſters, which are armed with ſharp Spines, both on the Side and Ends of the Shoots; the Leaves come out in ſmall Cluſters, which continue green all the Year. This doth not produce Seeds in *England*, ſo is propagated as the 5th Sort, and requires the ſame Treatment.

The 10th Sort ſends out from the Root many weak climbing Branches which riſe five or ſix Feet high, and are garniſhed with narrow Spear-ſhaped Leaves coming out ſingle; the Shoots are armed with ſhort crooked Spines, which are ſo cloſely ſet on, that it is difficult to handle the Branches. This is propagated by parting the Root; but the Plants muſt be placed in a moderate Stove, otherwiſe they will not thrive in this Country. It grows naturally in the Iſland of *Ceylon*.

Theſe Plants are preſerved in the Gardens of the Curious, where they add to the Variety; being not difficult to manage, where there is Conveniency to houſe them in Winter, among other exotic Plants.

ASPARAGUS SCANDENS. *See* Medeola.

ASPEN-TREE. *See* Populus.

ASPERUGO, Small Wild Bugloſs.

The *Characters* are,

The Empalement of the Flower is of one Leaf, cut ſlightly at the Top into five equal Parts; the Flower is of one

Leaf, with a ſhort cylindrical Tube, but is cut at the Top into five ſmall blunt Parts, which are cloſed at their Baſe: it hath five ſhort Stamina, crowned by oblong Summits; in the Center there are four compreſſed Germen, ſupporting a ſhort ſlender Style, crowned by a blunt Stigma. The Germen afterward become four oblong Seeds, encloſed in the Empalement.

We know but one *Species* of this Genus, which is,

ASPERUGO *Flor. Lapp.* 76. Small Wild Bugloſs, Great Gooſe Graſs, or *German* Madwort.

This is an annual Plant, which is found wild in ſome Parts of *England*, as near *Newmarket*, at *Boxley* in *Suſſex*, and in *Holy Iſland*. It is preſerved in the Botanick Gardens for Variety: It may be eaſily propagated by Seeds, which ſhould be ſown in Autumn; for if the Seeds are kept out of the Ground till Spring, they do not ſucceed ſo well. When the Plants come up, they require no other Culture but to keep them clear from Weeds; they flower in *May*, and ripen their Seeds in *June*, which, if ſuffered to ſcatter, will riſe in Autumn; ſo that when this Plant is once brought into a Garden, it will maintain itſelf, provided it be allowed a Place.

ASPERULA, Woodroof.

This Plant grows wild in ſhady Woods in many Parts of *England*, and flowers in *April* or *May*, and is ſometimes uſed in Medicine.

ASPHODELUS. King's Spear.

The *Characters* are,

The Flower has no Empalement; it is of one Leaf, cut into ſix Parts, which ſpread open; at the Bottom is inſerted a globular Nectarium, having ſix Valves; it hath ſix Awl-ſhaped Stamina, which are inſerted in the Valves of the Nectarium, and are crowned by oblong Summits, which are proſtrate, and turn upward; between the Nectarium is placed a globular Germen, ſupporting an Awl-ſhaped Style, crowned by a Club-like Stigma: The Empalement afterward becomes a fleſhy globular Seed-Veſſel, having three Cells, which are filled with triangular Seeds.

The *Species* are,

1. ASPHODELUS *caule folioſo, foliis triquetris fiſtuloſis.* King's Spear with a leafy Stalk, and triangular fiſtular Leaves. King's Spear with a yellow Root and Flower.
2. ASPHODELUS *caule nudo ramoſo foliis enſiformibus lævibus.* King's Spear with a naked branching Stalk, and ſmooth Sword ſhaped Leaves. *Aſphodelus albus.* Male branching King's Spear with white Flowers.
3. ASPHODELUS *caule nudo ſimplici foliis lineari-enſiformibus.* King's Spear with a ſingle naked Stalk, and narrow Sword-ſhaped Leaves. *Aſphodelus albus non ramoſus. C. B. P.* 28. White unbranched King's Spear.
4. ASPHODELUS *foliis enſiformibus carinatis ſcapo ramoſo-patulo.* King's Spear with Sword-like, Keel-ſhaped Leaves, and a branching ſpreading Stalk. Another ſmaller branching King's Spear with white Flowers.
5. ASPHODELUS *caule nudo foliis ſubulatis fiſtuloſis radice annuâ.* King's Spear with a naked Stalk, fiſtular Awl-ſhaped Leaves, and an annual Root. Annual branching Spiderwort with a ſmall Flower and fiſtular Leaves.
6. ASPHODELUS *foliis planis, caule ramoſo, floribus ſparſis.* King's Spear with plain Leaves, a branching Stalk, and Flowers placed thinly.

The 1ſt Sort is the yellow *Aſphodel*, which is directed for Uſe in Medicine; this hath Roots compoſed of many thick fleſhy Fibres, yellow and joined into a Head at the Top; from whence ariſe ſtrong round ſingle Stalks, near three Feet high, which are garniſhed their whole Length with long triangular hollow Leaves, of a Sea-green Colour; the upper Part of the Stalk is adorned half way with yellow Star-ſhaped Flowers, which begin toward the Bottom, and are followed by others above; ſo that on the ſame Spike, there is often a Succeſſion of Flowers for a Month. It flowers in *June*, and the Seeds ripen in Autumn.

The 2d Sort hath Roots compoſed of many thick fleſhy Fibres; to each of which is faſtened an oblong Tuber, as large as ſmall Potatoes; the Leaves are long and flexible, having ſharp Edges; theſe grow in irregular Cluſters, from the Crown of the Root; between theſe come out the Stalks, which riſe more than three Feet high, ſending out ſeveral Side Branches, which are naked; the upper Part of theſe are adorned with many white Star-ſhaped Flowers, conſiſting of one Leaf cut into ſix Parts, each having a purple Line running lengthways on the Outſide of each Segment. The Flowers grow in long Spikes, flowering gradually upward; and come out the Beginning of *June*; the Seeds ripen in Autumn.

The 3d Sort hath Roots like the 2d, but the Leaves are longer and narrower; the Stalks of this are ſingle, never putting out any Side Branches; the Flowers are of a purer white, and grow in longer Spikes. This flowers at the ſame Time with the former.

The 4th Sort hath Roots compoſed of ſmaller Fibres than the two laſt, nor are the Knobs at Bottom half ſo large; the Leaves are long, almoſt triangular, and hollow like the Keel of a Boat; the Stalks ſeldom riſe above two Feet, and divide into ſeveral ſpreading Branches; theſe are terminated by looſe Spikes of white Flowers, ſmaller than the former; it flowers at the ſame Time, and produces Plenty of Seeds in Autumn.

Theſe three Sorts are undoubtedly different Species; for I have ſeveral Years propagated them by Seeds, and have never yet found either of them to vary.

The 5th Sort is an annual Plant; the Roots of this are compoſed of many fleſhy Fibres, which are yellow; the Leaves are ſpread out from the Crown of the Root, cloſe to the Ground, in a large Cluſter; theſe are convex on their under Side, but plain above, and hollow like a Pipe; the Flower Stalks riſe immediately from the Root, and grow about two Feet high, dividing into three or four Branches upward, which are adorned with white ſtarry Flowers, with purple Lines on the Outſide. Theſe flower in *July* and *Auguſt*, and their Seeds ripen in *October*, ſoon after which the Plants decay. It grows naturally in the South of *France*, *Spain*, and *Italy*.

The 1ſt Sort grows naturally in many of the Iſlands of the *Archipelago*, alſo in *Sicily*. The 2d, 3d, and 4th grow naturally in *Portugal*, *Spain*, and *Italy*; the 3d Sort is not quite ſo hardy as either of the other, ſo the Roots muſt be covered in very ſevere Froſt.

The yellow Sort multiplies very faſt by Roots, and will ſoon overſpread a large Border, if ſuffered to remain unremoved, or the Side Roots are not taken off; but the other Sorts are not ſo productive of Shoots from their Sides, and are much better kept within Bounds.

The 2d and 3d Sorts do not increaſe very faſt by their Roots, nor ſhould they be often tranſplanted, for that will weaken them, ſo that their Flower Stems will not riſe ſo tall, or produce ſo many Flowers, as when left undiſturbed for ſome Years; therefore the beſt Way is to propagate theſe by Seeds. The 4th Sort will increaſe much faſter by Roots; and the Seeds when permitted to ſcatter, will grow in Plenty.

Theſe 4 Sorts of Aſphodel are very pretty Ornaments for a Flower Garden, and, requiring very little Trouble, are more acceptable. They may be all propagated by Seeds, which ſhould be ſown ſoon after they are ripe, on a warm Border of light freſh Earth: In Spring the Plants will appear, when you ſhould carefully clear them from Weeds, and in dry Weather they muſt be frequently watered: If this be duly obſerved, the Plants will have acquired Strength enough to be tranſplanted by the *Michaelmas* following; at which Time you muſt prepare a Bed of freſh Earth in the Flower Nurſery, into which you ſhould plant the Roots, at about ſix Inches Diſtance every Way; obſerving to plant them ſo low, as that the Top of the Roots may be three or four Inches under the Surface of the Bed; and ſome old Tan, or Dung ſhould be ſpread over the Surface of the Ground, to keep out the Froſt: In this Bed they may remain one Year, during which Time they ſhould be kept clear from Weeds. The Roots having acquired Strength enough to produce Flowers the following Year, they ſhould, at *Michaelmas*, when their Leaves are decayed, be carefully taken up, and tranſplanted into the Flower Garden, obſerving to place them in the Middle of the Borders, amongſt other hardy Flowers, where being properly intermixed, they will make an agreeable Variety, and continue a long Time in Flower.

The 5th Sort is an annual, ſo is only propagated by Seeds, theſe ſhould be ſown in Autumn; when the Plants are up, they require no other Trouble but to keep them clean from Weeds, until they have put out four or five Leaves, when they ſhould be carefully removed to the Places where they are to remain. If the Seeds of this Plant are permitted to ſcatter, the Plants will come up without Care, and thoſe which are not removed, will be the ſtrongeſt, and produce a greater Number of Flowers.

The 6th Sort was raiſed from Seeds in the *Chelſea* Garden, *Anno* 1751, where it produced Flowers the following Year. The Seeds came from the *Cape of Good Hope*, where this Plant naturally grows.

The Roots of this Plant are compoſed of many Tubers or Fangs, each about the Size of a little Finger, toward the upper Part, where they are largeſt, and diminiſh gradually downward to the Size of a ſmall Straw. Theſe are joined together at the Crown (like the Roots of Aſparagus), where the Buds are formed; from whence the Leaves are produced, which are generally ſeven or eight in Number, coming out without any Order. Theſe are nine or ten Inches in Length, and an Inch and Half broad in the Middle, leſſening gradually to both Ends; they are ſmooth, and of a glaucous or Sea-green Colour. From the Center of the Root ariſes the Flower Stem, which grows about two Feet and a Half high, and divides into ſeveral Branches, having a few narrow Leaves, generally one being placed at every Diviſion of the Branch. The Flowers are produced thinly on the Branches, forming a looſe Spike or Thyrſus; they are white, and conſiſt of one Leaf, which is deeply cut into ſix Parts; in the Center is placed the Germen ſupporting the Pointal, attended by ſix Stamina which are inſerted in the Valves of the Nectarium, and are alternately ſhort. The Germen becomes a roundiſh Seed Veſſel, opening in three Cells, which are filled with triangular Seeds.

This Plant is too tender to live through the Winter in the open Air in *England*, ſo muſt be kept in Pots and houſed in Winter, or placed under a hot Bed Frame, where the Froſt is kept out by Covering; in which Management, the Plants will thrive better than in a common Green-houſe. In Winter theſe Plants muſt have little Wet, for much Moiſture at that Seaſon, is apt to rot their Roots. It is propagated by Seeds, for the Roots do not increaſe in *England*.

ASTER. Starwort.

The *Characters* are,

It hath a compound Flower, compoſed of ſeveral female and hermaphrodite Flowers included in one common ſcaly Empalement; the Rays or Border of the Flower is compoſed of ſeveral female Flowers, whoſe upper Parts are ſtretched out on one Side like a Tongue, and indented in three Parts at the End; the hermaphrodite Flowers form the Diſk or Middle; theſe are Funnel-ſhaped, and divided at the Top into five Parts, which ſpread open, and have each five ſhort ſlender Stamina, crowned with cylindrical Summits; in the Bottom is placed a crowned Germen, ſupporting a ſlender Style crowned by a bifid Stigma; the Germen becomes an oblong Seed, crowned with Down: The female Flowers have a Germen ſupporting a ſlender Style, crowned by two oblong Stigma, which turn backward. Theſe have no Stamina, but in other Reſpects are like the hermaphrodite Flowers.

The *Species* are,

1. Aster *foliis lanceolatis hirtis, radicalibus obtuſis, caule ſimpliciſſimo unifloro. Lin. Sp. Plant.* 872. Starwort with hairy Spear-ſhaped Leaves, thoſe near the Root blunt, and a ſingle Stalk, having one Flower. *Aſter montanus cæruleus. C. B. P.* 267. Blue Mountain Starwort with a large Flower, and oblong Leaves.

2. Aster *foliis lanceolatis obtuſis ſcabris trinervis integris, pedunculis nudiuſculis corymboſis ſquamis calycinis obtuſis. Lin. Sp. Plant.* 873. Starwort with rough blunt Spear-ſhaped Leaves, which are entire, having three Veins, naked Foot Stalks in a Corymbus, and blunt Scales to the Empalement. *Aſter atticus cæruleus.* Blue Attick Starwort, vulgarly called *Italian* Starwort.

3. Aster *foliis lanceolatis integerrimis carnoſis glabris ramis inæquatis, floribus corymboſis. Lin. Sp. Plant.* 872. Starwort with ſmooth fleſhy Spear-ſhaped Leaves, which are entire, unequal Branches, and Flowers in a Corymbus. *Aſter maritimus*, Sea Starwort called *Tripolium.*

4. Aster *foliis linearibus acutis integerrimis, caule corymboſo ramoſiſſimo. Hort. Cliff.* 408. Starwort with narrow pointed Leaves, which are entire, and a very branchy Stalk growing in a Corymbus. Starwort with a Flower of *Tripolium*, and a very narrow thin Leaf.

5. Aster *foliis lanceolatis alternis integerrimis ſemiamplexicaulibus, floribus terminalibus. Hort. Cliff.* 408. Starwort with entire Spear-ſhaped Leaves, growing alternate, and half embracing the Stalks, which are terminated by Flowers. Talleſt hairy *New England* Starwort with large purple Violet Flowers.

6. ASTER *foliis cordato-lanceolatis undulatis floribus racemoſis adſcendentibus. Hort. Cliff.* 408. Starwort with Heart Spear-ſhaped waved Leaves, and Flowers growing in aſcending Spikes. Purple *New England* Starwort with the Appearance of Golden Rod, and waved Leaves.

7. ASTER *foliis ſemiamplexicaulibus lanceolatis ſerratis ſcabris, pedunculis alternis ſubunifloris calycibus diſcum ſuperantibus. Hort. Cliff.* 408. Starwort with rough ſawed Spear-ſhaped Leaves, half embracing the Stalks, Foot Stalks growing alternate, with a ſingle Flower, whoſe Empalement is higher than the Diſk. Broad leaved *American* Starwort with purpliſh Stalks.

8. ASTER *floribus ovatis diſco radiis longiore. Lin. Sp. Plant.* 877. Starwort with oval Flowers, whoſe Diſk is longer than the Rays. Late flowering white Starwort like Heath, and the Diſk like Wild Melilot.

9. ASTER *foliis lanceolatis ſubſerratis ſeſſilibus caule paniculato ramulis unifloris ſolitariis calycibus ſquarroſis. Hort. Cliff.* 408. Starwort with Spear-ſhaped Leaves, ſomewhat jagged and growing cloſe to the Stalk, which is looſe and ſpiked, and Branches having a ſingle Flower with a rough Empalement. Broad leaved umbellated Starwort of *New Holland*, with pale Violet Flowers.

10. ASTER *foliis lanceolato-linearibus ſubcarnoſis integerrimis planis floribus corymboſis faſtigiatis pedunculis folioloſis. Lin. Sp. Plant.* 874. Starwort with narrow Spear-ſhaped fleſhy Leaves which are plain and entire, Flowers gathered into a Corymbus, and leafy Foot Stalks. Starwort with the *Tripolium* Flower.

11. ASTER *caule ſimpliciſſimo foliis ovatis ſeſſilibus integerrimis racemo terminali. Flor. Virg.* 178. Starwort with ſingle Stalks, oval entire Leaves growing cloſe to the Stalks, which end in a looſe Spike.

12. ASTER *caule paniculato pedunculis racemoſis pedicellis folioſis foliolis linearibus integerrimis. F. V.* Starwort with a ſpiked Stalk, branching Foot Stalks, and the ſmaller Foot Stalks which are leafy, garniſhed with ſmall narrow entire Leaves. Buſhy Heath like Starwort.

13. ASTER *foliis cordatis ſerratis petiolatis, caule paniculato. Hort. Cliff.* 408. Starwort with ſawed Heart-ſhaped Leaves, having Foot Stalks, and a looſe ſpiked Stalk. Broad leaved autumnal Starwort.

14. ASTER *foliis lanceolato-linearibus medio ſerratis pedunculis folioſis caule racemoſo calycibus erectis. Hort. Cliff.* 408. Starwort with narrow Spear-ſhaped Leaves, ſawed in the Middle, leafy Foot Stalks, branching Stalks, and upright Flower Cups. *American* Starwort with Leaves like Summer Cypreſs, and bluiſh white Flowers growing in very long Spikes.

15. ASTER *caule corymboſo foliis lanceolatis reflexis, floribus ſolitariis, calycibus patulis. Flor. Leyd.* 168. Starwort with a corymbous Stalk, Spear-ſhaped reflected Leaves, and ſingle Flowers with ſpreading Empalements. Pyramidal *Virginia* Starwort with rough Hyſſop Leaves, and leafy Scales to the Empalement.

16. ASTER *foliis lanceolatis ſcabris integris, caule ramoſo, pedunculis folioſis, calycibus obtuſis.* Starwort with rough Spear-ſhaped entire Leaves, a branching Stalk, leafy Foot Stalks, and blunt Empalements. *Aſter Atticus Alpinus alter.* Another *Attick* Starwort of the *Alps.*

17. ASTER *foliis oblongo-lanceolatis acutis ſerratis caule ramoſo floribus terminalibus calycibus linearibus erectis.* Starwort with oblong Spear-ſhaped pointed Leaves, which are ſawed, a branching Stalk, terminated by Flowers whoſe Empalements are very narrow, and erect. Starwort with ſmooth jagged Leaves, growing ſcatteringly like thoſe of the Peach Tree, and pale blue Flowers.

18. ASTER *foliis oblongis acutis baſi latioribus ſemiamplexicaulibus, caule ramoſo floribus terminalibus plerumque ſolitariis.* Starwort with oblong pointed Leaves, which are broader at the Baſe, and half embrace the Stalks, which are branchy, and terminated with Flowers, for the moſt Part ſingly. Late blue ſhrubby Starwort of *John Tradeſcant*, commonly called *Michaelmas* Daiſy.

19. ASTER *caule erecto hirſuto foliis oblongis acutis ſcabris acutè dentatis ſemiamplexicaulibus floribus corymboſis calycibus hirſutis erectis.* Starwort with a hairy upright Stalk, oblong pointed rough Leaves ſharply indented, and hairy erect Empalements. Early *Pyrenæan* Starwort with a large blue Flower.

20. ASTER *caule altiſſimo hirſuto ſimpliciſſimo foliis oblongis acutis baſi latioribus ſemiamplexicaulibus floribus tribus ſeſſilibus terminalibus.* Starwort with a very tall hairy unbranched Stalk, oblong pointed Leaves, which are broader at the Baſe, and half embrace the Stalks, which are terminated by three Flowers ſitting very cloſe.

21. ASTER *caule ramoſiſſimo patulo, foliis lineari-lanceolatis rigidis, floribus ſeriatim poſitis pedunculis folioſis.* Starwort with a very branching ſpreading Stalk, narrow Spear-ſhaped ſtiff Leaves, Flowers placed one above another, and leafy Foot Stalks.

22. ASTER *foliis lanceolatis acutis ſcabris, caule ſimplici floribus umbellatis terminalibus.* Starwort with rough pointed Spear-ſhaped Leaves, and a ſingle Stalk, terminated by Flowers, growing in an Umbel.

23. ASTER *foliis nervoſis lanceolatis acutis linearibus, caule ſimplici floribus terminalibus quaſi umbellatim diſpoſitis.* Starwort with narrow Spear-ſhaped pointed nervous Leaves, and a ſingle Stalk, terminated by Flowers growing almoſt in an Umbel.

24. ASTER *foliis inferioribus ovatis baſi ſemiamplexicaulibus, ſuperioribus lanceolatis parvis caule paniculato ramis unifloris pedunculis folioſis.* Starwort with the lower Leaves oval, whoſe Baſe half embraces the Stalks, the upper Leaves ſmall and Spear-ſhaped, a Stalk terminated by a looſe Spike, with a ſingle Flower on each Branch, and a leafy Foot Stalk.

25. ASTER *floribus terminalibus ſolitariis foliis linearibus alternis. Flor. Virg.* 98. Starwort with ſingle Flowers at the ends of the Branches, and very narrow Leaves placed alternately.

26. ASTER *foliis lineari-lanceolatis acutis ſeſſilibus caule paniculato, ramis unifloris pedunculis folioſis linearibus.* Starwort with narrow pointed Spear-ſhaped Leaves, growing cloſe to the Stalks, which end in looſe Spikes, and Branches ending with a ſingle Flower, whoſe Foot Stalks have narrow Leaves. *Canada* Starwort with a Toad-Flax Leaf.

27. ASTER *foliis lineari-lanceolatis glabris trinerviis floribus corymboſis terminalibus.* Starwort with ſmooth, narrow, Spear-ſhaped Leaves, with three Veins, and Flowers in a Corymbus, which terminate the Stalks. Broad leaved Starwort with the *Tripolium* Flower.

28. ASTER *foliis linearibus integerrimis caule paniculato. Hort. Cliff.* 408. Starwort with very narrow Leaves, which are entire, and a looſe Spike of Flowers. *New*

England Starwort with Toad-flax Leaves, and a Chamomile Flower.

29. Aster *foliis lanceolatis ſeſſilibus integerrimis caule paniculato pedunculis folioſis.* Starwort with Spear-ſhaped Leaves which are entire, adhering to the Stalk, which is terminated by a looſe Spike of Flowers, with leafy Foot Stalks. Broad leaved Starwort of *New Holland*, with deep violet-Flowers growing in looſe Spikes.

30. Aster *foliis lanceolatis lateribus inferiorum crenatis radice annuâ, caule Corymboſo pedunculis nudis. Hort. Cliff.* 409. Starwort with Spear-ſhaped Leaves, the Sides of the lower Leaves jagged, an annual Root, and Stalks ending with a Corymbus of Flowers, with naked Foot Stalks. Annual branching *Canada* Starwort.

31. Aster *caule ramoſo ſcabro perenni, foliis ovatis oppoſitis pedunculis nudis unifloris. Fig. Pl. Tab.* 76. Starwort with a rough perennial branching Stalk, oval Leaves growing oppoſite, and naked Foot Stalks with one Flower.

32. Aster *foliis linearibus faſciculatis punctatis, pedunculis unifloris nudis, caule fruticoſo rugoſo. Hort. Cliff.* 409. Starwort with narrow pointed Leaves growing in Cluſters, naked Foot Stalks with one Flower, and a ſhrubby wrinkled Stalk. Shrubby *African* Starwort with narrow Leaves, for the moſt part joined together.

33. Aster *foliis ovatis angulatis dentatis, petiolatis calycibus terminalibus patentibus folioſis. Hort. Cliff.* 407. Starwort with oval angular indented Leaves, and the Empalements terminated by ſpreading Leaves. Annual Starwort with a Gooſe Foot Leaf, and a large beautiful Flower, commonly called *China Aſter*.

34. Aster *foliis pinnatis. Hort. C.* 407. Starwort with winged Leaves. *American* Starwort with winged and ſawed Leaves, and an orange coloured Flower.

35. Aster *hirſutis foliis lanceolatis ſemiampexicaulibus floribus quaſi umbellatim diſpoſitis.* Hairy Starwort with Spear-ſhaped Leaves, half embracing the Stalks, and Flowers growing almoſt in an Umbel. Hairy *Carolina* Starwort with Leaves like blue Fleabane, and yellow Flowers diſpoſed in an Umbel.

36. Aster *foliis ovatis dentatis caule procumbente, pedunculis nudis axillaribus unifloris.* Starwort with oval indented Leaves, a trailing Stalk, and naked Foot Stalks proceeding from the Side with a ſingle Flower. *Aſter Americanus procumbens. Houſt. Mſſ.* Trailing *American* Starwort, with the Appearance of the leſſer Daiſy.

37. Aster *caule fruticoſo, ramis unifloris, foliis ovato-lanceolatis recurvis ſerrato ciliatis. Lin. Sp. Pl.* 877. Starwort with a ſhrubby Stalk, Branches with a ſingle Flower, and oval, Spear-ſhaped, recurved Leaves, jagged at their Edges. Shrubby *African* Starwort with ſmall reflexed ſhining Leaves.

The 1ſt Sort grows naturally upon the *Alps*, where it ſeldom riſes more than ſix Inches high, and when tranſplanted into a Garden, not above nine Inches. It ſends up a ſingle Stalk from the Root, which is thinly garniſhed with oblong Leaves; at the Top of the Stalk is one large blue Flower, ſomewhat like thoſe of the *Italian* Starwort. This flowers in *June*; the Root is perennial, but muſt be planted in a ſhady Situation, and a moiſt Soil. It is propagated by Seeds ſown in Autumn.

The 2d Sort is the *Italian* Starwort, which was ſome Years paſt more common in Gardens than at preſent; for ſince the great Variety of *American* Starworts have been introduced into *England*, this Sort hath not been ſo much cultivated, though it is by no means inferior to the beſt of them, and, in ſome reſpects, preferable to moſt of them; for it is not ſo ſubject to creep by the Root, as many of the *American* Sorts do, whereby they often become troubleſome in ſmall Gardens, nor do the Stalks require ſupporting as they do, for they ſeldom grow more than two Feet high, and the Stalks are very ſtrong, ſo are very rarely broken by the Wind. Theſe grow in large Cluſters from the Root, and each of them branch at the Top into eight or ten Foot Stalks, each of which is terminated by a ſingle large Flower, having blue Rays, with a yellow Diſk. It flowers in *October*, and, in mild Seaſons, will often continue till the Middle of *November*, during which Time they are very ornamental Plants in a Garden. This Sort is propagated by parting the Roots, the beſt Time for which is ſoon after they are out of Flower, for thoſe which are removed in the Spring will not flower ſo ſtrong the ſucceeding Summer. Theſe Roots ſhould not be removed oftener than every third Year where they are expected to produce many Flowers.

This Plant grows naturally in the Vallies of *Italy*, *Sicily*, and *Narbonne*, and is generally ſuppoſed to be the *Amellus* mentioned by *Virgil*, in his fourth Georgick, to grow in the Paſtures; and the Leaves and Stalks being rough and bitter, the Cattle ſeldom browſe upon it, ſo that whenever there are any of theſe Roots in the Fields, they ſend up a thick Tuft of Stalks, which being left after the Graſs is eaten bare, theſe being full of Flowers, make a fine Appearance, and therefore might engage the Poet's Attention.

The 3d Sort grows naturally in Salt Marſhes, which are flowed by the Tides, and is ſeldom admitted into Gardens. It flowers in *July* and *Auguſt*.

The 4th Sort is a Native of *North America*, but has been many Years in the *Engliſh* Gardens. It ſends up many ſtrong Shoots from the Root every Spring, which riſe between four and five Feet high, and are garniſhed with oblong Leaves, placed alternately, and half embrace the Stalk with their Baſe; from the main Stalks, many Side Branches are put out, for near half their Length, theſe are garniſhed with ſmaller Leaves, which diminiſh in their Size to the Top, where there is a ſingle Flower, terminating the Stalk, of a blue Colour. This flowers in *Auguſt* and *September*; it is eaſily propagated by parting the Roots, ſoon after the Flowers are paſt, and will thrive in any Situation.

The 5th Sort ſends up many Stalks from the Root, which riſe five Feet high; theſe are garniſhed with Spear-ſhaped Leaves which are entire, and half embrace the Stalks, which are terminated by large purple Violet Flowers, growing in a looſe Panicle: It flowers in *Auguſt*, and is very hardy, ſo may be planted in any Soil or Situation, and is propagated by parting the Roots.

The 6th Sort grows naturally in *North America*. This hath broad Heart-ſhaped waved Leaves at the Bottom, the Stalks riſe between two and three Feet high, which ſend out ſmall Side Branches, upon which the Flowers come out in looſe Spikes, of a very pale blue Colour inclining to white. This flowers in the ſame Seaſon, and may be propagated as the former.

The 7th Sort ſends up ſeveral ſtrong Stalks, upward of two Feet high, which are of a purple Colour, and are garniſhed with Spear-ſhaped ſmooth Leaves, whoſe Baſe embraces the Stalks half round; the Flowers grow upon ſingle Foot Stalks, forming a Corymbus at the Top, and are of a pale blue Colour; theſe appear the latter End of *September*. It comes from *North America*, and may be propagated as the former.

The 8th Sort riſes with ſlender Stalks, upward of 3 Feet high; theſe ſend out many weak Branches on every Side, which are garniſhed with very ſmall Leaves; the Flowers come out on ſhort Foot Stalks, on every Side of the Branches, which are ſmall, with white Rays and a yellow Diſk. Theſe appear in *November*, and often continue Part of *December*. This comes from the ſame Country, and may be propagated as the former.

The 9th Sort riſes near 4 Feet high, having broad Leaves at the Bottom, which diminiſh gradually to the Top; the Flowers are produced in a looſe Kind of Umbel at the Top of the Stalks, which are of a pale blue Colour; theſe appear the latter Part of *Auguſt*. This is hardy, and may be propagated as the former.

The 10th Sort grows naturally in the South of *France* and *Italy*; the Stalks of this divide into a great Number of Branches, which divide again toward the Top into ſeveral ſmaller; theſe are fully garniſhed with very narrow Leaves their whole Length; the Flowers grow in large Cluſters at the Top, forming a Sort of Corymbus; they are of a pale bluiſh Colour, and appear the Beginning of *Auguſt*. This is hardy, and may be propagated by parting the Roots, as the former.

The 11th Sort riſes 4 Feet high, with a ſingle Stalk, and oval Leaves growing cloſe to the Stalks, which are terminated by ſlender looſe Spikes of pale blue Flowers, which appear about *Michaelmas*. It comes from *North America*, and is propagated as the former.

The 12th Sort ſends up ſlender Stalks 3 Feet high, which ſend out ſlender Side Branches moſt of their Length, ſo as to form a thick Buſh; theſe are garniſhed with very narrow Leaves their whole Length, and are terminated by ſingle Flowers.

The 13th Sort grows about 2 Feet high, having ſlender Stalks, which are garniſhed with oblong pointed Heart-ſhaped Leaves, which are ſharply ſawed on their Edges; the upper Part of the Stalks is divided into ſeveral ſmall Branches, which are terminated by white Flowers growing in looſe Panicles. This flowers in *September*, and may be propagated as the former.

The 14th Sort ſends up Stalks 5 Feet high, which put out many ſlender Side Branches, which are garniſhed with narrow Spear-ſhaped Leaves, and are terminated by Spikes of ſmall white Flowers, which appear the End of *October*. This Sort ſpreads greatly at the Root, ſo is apt to over-run the Borders.

The 15th Sort hath narrow oblong hairy Leaves at the Bottom; the Stalks riſe three Feet high, and are garniſhed with ſmall narrow rough Leaves which turn backward; the Stalks ſend out many Side Branches, each being terminated by a ſingle large blue Flower. It flowers the End of *October*, and continues moſt Part of *November*, when it makes a fine Appearance. It doth not multiply faſt by its Roots, but may be propagated in Plenty, by Cuttings made from the young Shoots in *May*, which if planted in a Bed of light Earth, and ſhaded from the Sun, will take Root, and theſe will flower the ſame Year It is commonly called by the Gardeners *Cateſby*'s Star wort, from Mr. *Cateſby*, who brought it from *Virginia*

The 16th Sort ſends up ſeveral Stalks a Foot and a Half high, which are garniſhed with rough Spear-ſhaped Leaves, ſending out many Side Branches which diverge from the Stalk every Way; theſe are terminated for the moſt Part by one large blue Flower, ſomewhat like thoſe of the *Italian* Starwort, but paler and comes earlier to flower. It grows naturally on the *Alps*, and is propagated by parting the Root.

The 17th Sort riſes to the Height of 5 Feet, with branching Stalks, garniſhed with oblong Spear-ſhaped Leaves, which are ſawed on their Edges. Each of the Side Branches are divided at the Top into ſeveral Foot Stalks, which are terminated by large pale blue Flowers, in *October*. This grows naturally in *North America*, and is propagated by parting the Roots.

The 18th Sort was brought from *Virginia* many Years ago, by Mr. *John Tradeſcant*, and from his Garden it was ſoon diſperſed, and became common. It is generally known by the Title of *Michaelmas* Daiſy, from its flowering about old *Michaelmas* Day. The Stalks of this Sort are numerous, and riſe about three Feet high, being fully garniſhed with oblong Leaves ending in a Point, whoſe Baſe half embraces the Stalks. Theſe ſhoot out many lateral Branches, terminated by pretty large Flowers, of a very pale bluiſh Colour tending to white. The Roots multiply very faſt, and the Seeds often are blown about, ſo that it propagates ſo much as to be troubleſome; it will thrive in any Situation.

The 19th Sort ſends up ſeveral ſtrong hairy Stalks, which riſe a Foot and a Half high, having many oblong rough Leaves ending in a Point, whoſe Baſe half embraces the Stalks, which divide into many ſmall Branches at the Top, forming a Kind of Corymbus, each being terminated by one large blue Flower, having a very hairy Empalement. This flowers the latter End of *July*. It grows naturally on the *Alps*, ſo is very hardy, but ſhould have a moiſt Soil and a ſhady Situation. It is propagated by parting of the Roots.

The 20th Sort riſes with ſtrong hairy Stalks, to the Height of 8 or 9 Feet, which are upright, unbranched, and garniſhed with oblong hairy Leaves ending in a Point, and their Baſe half ſurrounds the Stalks, which are for the moſt Part terminated by three large purple Flowers inclining to red, and ſit cloſe to the Top of the Stalk, ſurrounded by a few narrow Leaves. This Sort flowers in *November*. It came from *Philadelphia*, where it naturally grows, and is propagated by parting the Roots; it delights in a moiſt Soil.

The 21ſt Sort hath ſlender purpliſh Stalks, which riſe about three Feet high, ſending out many Side Branches almoſt their whole Length, which ſpread horizontally, and are garniſhed with narrow ſmall Spear-ſhaped Leaves; the Flowers are produced in a Sort of looſe Spike, growing one above another on each Side the Stalk. They are ſmall, of a pale purpliſh Colour, and appear in *November*. It grows naturally in *North America*, and is eaſily propagated by parting the Roots.

The 22d Sort grows naturally in *Philadelphia*. This ſends up ſtiff channeled Stalks about two Feet high, garniſhed with rough Spear-ſhaped Leaves ending in a Point, which are placed alternately on every Side the Stalks; the Flowers are white, and grow in a Sort of Umbel at the Top of the Stalks. It flowers the End of *September*, and is propagated by parting the Roots.

The 23d Sort I received from *Pennſylvania*. This hath much the Appearance of the former Sort, but the Leaves are narrower, whiter on their under Side, and have three longitudinal Veins; the Flowers are alſo larger and whiter. It grows about the ſame Height, and flowers at the ſame Time with the former.

The 24th Sort riſes four Feet high, the Bottom Leaves are oval and half ſurround the Stalk at their Baſe; the upper Leaves are ſmall and Spear-ſhaped, the Stalks put out Side Branches toward the Top, which grow erect, forming a looſe Spike, each being terminated by one large blue Flower, with a leafy Foot Stalk; this flowers about the End of *October*. It grows naturally in *North America*, and is propagated by parting the Roots.

The 25th Sort ſends up ſeveral ſlender Stalks near three Feet high, garniſhed by many very narrow Leaves, and puts out Side Branches, each being terminated by one white Flower. This grows naturally in *Philadelphia*; it flowers in *November*, and is eaſily propagated by parting the Roots.

The 26th Sort riſes about a Foot and a Half high, the Stalks are garniſhed with very narrow ſmooth Spear-ſhaped Leaves; at the End of the Stalks many Foot Stalks are ſent out on every Side, each being terminated by one pale blue Flower, having a leafy Foot Stalk. This grows naturally in *Canada*, and is propagated by parting the Roots.

The 27th Sort grows about two Feet high, with erect Stalks garniſhed with narrow ſmooth Spear-ſhaped Leaves, which come out irregularly in Cluſters; from the upper Part of the Stalks, there are a few Side Branches produced, garniſhed with very narrow Leaves; the Flowers are in Form of a Corymbus at the End of the Stalks, of a pale blue Colour, and appear in *September*. This is propagated by parting the Roots.

The 28th Sort riſes with ſlender Stalks about three Feet high, which are garniſhed with very narrow Leaves, and terminated by looſe Panicles of Flowers, whoſe Rays are white and their Diſks yellow. This flowers in *October*, and is propagated by parting the Roots.

The 29th Sort ſends out many ſtrong Stalks, which riſe about three Feet high, dividing into ſeveral Side Branches, garniſhed with Spear-ſhaped Leaves growing cloſe to the Branches, which are terminated by looſe Spikes of dark blue Flowers, which appear in *October*. This is propagated by parting the Roots.

The 30th Sort is an annual Plant, which when once introduced into a Garden, the Seeds will ſcatter, and the Plants come up without Care. This ſends up ſtrait Stalks about two Feet high, which are terminated by white Flowers growing in Form of a Corymbus. It flowers in *Auguſt*, and the Seeds ripen in *October*.

We have ſome other Varieties of *American* Starworts, which are ſuppoſed to be ſeminal Variations, therefore I have not enumerated them as diſtinct Species. Thoſe which are here mentioned, I have cultivated many Years, and have not found them vary when raiſed from Seeds; for moſt of them perfect their Seeds in *England*, ſo may be propagated by ſowing them in the Autumn, ſoon after they are ripe; for if the Seeds are kept out of the Ground till Spring, few of them will grow, or will lie in the Ground a whole Year before the Plants appear. But as the greateſt Part of them increaſe faſt by their ſpreading Roots, their Seeds are rarely ſown.

The 31ſt Sort grows naturally at the *Cape of Good Hope*, from whence the Seeds were ſent me in 1753, but without any Title. Theſe were ſown in *October*, and the following Spring two Plants came up from them in the *Chelſea* Garden, which have flouriſhed extremely well, and have been propagated ſince in Plenty.

The Plant has many fibrous Roots, from which ariſes a purpliſh rough Stalk, which divides into many Branches near the Root, ſo as to form a low buſhy Plant, for it ſeldom riſes more than two Feet high, but the Branches will extend more than a Foot on every Side: Theſe are garniſhed with oval Leaves about an Inch long, and a third Part of an Inch broad; they are pretty thick and ſucculent, and are rough to the Touch, coming out at the Joints of the Stalks by Pairs oppoſite, and ſometimes three at a Joint, or in other Places two larger and two ſmaller at the ſame Joint, having no Foot Stalks: Toward the upper Part of the Branches, the Foot Stalks of the Flower ariſe, which are from four to ſix Inches long, and naked, each ſupporting a ſingle radiated Flower.

The Rays of the Flower are of a fine Sky-blue Colour, which, after they have been ſome Time expanded, turn back toward the Empalement; the Diſk of the Flower is yellow. After the Flower falls away, each of the Florets which compoſe the Diſk is ſucceeded by a ſingle Seed, crowned with a ſoft Down. The whole Plant is a little acid to the Taſte.

This Plant is never deſtitute of Flowers the whole Year, for in the Winter Seaſon, there will always be a Number of them in Beauty, though at that Time they are not ſo numerous, or quite ſo large as in Summer; however, they make a fine Appearance at all Seaſons; and as they only require to be protected from Froſt, they deſerve a Place in every curious Garden. The Plants which I raiſed in the *Chelſea* Garden, placed in a Frame with only wooden Shutters to cover them in the Froſt, have been as vigorous, and continued flowering through the Winter, full as well as thoſe placed in the Green-houſe; but they will not live in the open Air, for in order to try if they might be naturalized to this Country, I ſowed ſome of the Seeds the two laſt Springs, in a Bed of dry Earth, in a warm Situation, where the Plants came up very well, grew ſtrong all the Summer, and in Autumn produced Flowers, but the firſt hard Froſt entirely deſtroyed them. This Plant perfects its Seeds very well, ſo may be propagated by ſowing them in *April*, in a Bed of light Earth; and when the Plants are large enough to tranſplant, they ſhould be each put into a ſeparate ſmall Pot, and placed in the Shade, until they have taken freſh Root, when they may be ſet in the open Air till toward the End of *October*, at which Time they ſhould either be removed into the Green-houſe, or put under a hot Bed Frame to ſcreen them from the Froſt in Winter. It may alſo be propagated by Cuttings, planted in a ſhady Border any Time in Summer, and when rooted muſt be treated as the Seedlings.

The 32d Sort grows naturally at the *Cape of Good Hope*. This riſes with a woody Stem about three Feet high, ſending out many Side Branches which are ligneous, and garniſhed with narrow Leaves coming out in Cluſters from one Point, like thoſe of the Larch Tree; the Flowers are produced from the Side of the Branches, upon long ſlender Foot Stalks ſingly; theſe are of a pale blue Colour, and appear the Beginning of *March*; as this Plant never produces Seeds in *Europe*, it is only propagated by Cuttings, which may be performed any Time in the Summer. Theſe ſhould be planted in ſmall Pots filled with light Earth, and plunged into an old hot Bed; where, if they are ſhaded from the Sun, and gently watered, they will put out Roots in 6 Weeks, when they may be placed in the open Air; and in about a Month after they ſhould be ſeparated, and each planted into a ſmall Pot filled with light ſandy Earth. In *October* theſe muſt be removed into the Green-houſe, and placed where they may enjoy as much free Air as poſſible, but ſecured from Froſt or Damps, either of which will deſtroy them; ſo that they are much eaſier preſerved in a Glaſs Caſe, where they will enjoy more light and Air; but they muſt not be placed in a Stove, for artificial Heat will ſoon deſtroy them. This Sort is at preſent but in few *Engliſh* Gardens.

The 33d Sort is a Native of *China*, from whence the Seeds were ſent to *France* by the Miſſionaries, where the Plants were firſt raiſed in *Europe*. In the Year 1731, I received Seeds of this, from which I raiſed Plants with red, and ſome with white Flowers; and in 1736 I received Seeds of the blue Flower, but theſe were all ſingle. They came by the Title of *La Reine Marguerette*, or the *Queen of Daiſies*, by which Title the *French* ſtill call it. In 1752, I received Seeds of the double Flowers both red and blue, and in 1753 the Seeds of the double white Sort. Theſe have retained their Difference from that Time without Variation, yet as they are generally ſuppoſed to be only Varieties, ſo I have not inſerted them as different Species.

As theſe are annual Plants, they are only propagated by Seeds, which muſt be ſown in Spring upon a gentle hot Bed, juſt to bring up the Plants; for they ſhould be inured to the open Air as ſoon as poſſible, to prevent their being drawn up very weak: When the Plants are big enough to remove, they ſhould be carefully taken up and planted in a Bed of rich Earth at 6 Inches Diſtance each Way, obſerving to ſhade them from the Sun till they have taken new Root; and if the Seaſon proves dry, they muſt be often refreſhed with Water. In this Bed they may remain a Month or 5 Weeks, by which Time they will be ſtrong enough to tranſplant into the Borders of the Flower Garden where they are deſigned to remain; the Plants ſhould be taken up carefully, with large Balls of Earth to their Roots, and the Ground dug up and well broken with the Spade, where the Holes are made to receive the Plants: After they are planted, and the Earth cloſed about their Roots, there ſhould be ſome Water given them to ſettle the Earth. This Work ſhould, if poſſible, be done when there is Rain, for then the Plants will ſoon take new Root, after which they require no other Care but to keep them clear from Weeds.

In *Auguſt* theſe Plants will flower, by which Time if the Ground is rich in which they are planted, they will be 2 Feet high, and furniſhed with many Side Branches, each of which is terminated by a large radiated Flower, ſome white, ſome red, and others blue. Theſe are ſome of the greateſt Ornaments in the Flower Garden in Autumn. The Seeds ripen the Beginning of *October*, which ſhould be gathered when perfectly dry; and in order to preſerve the Kinds with double Flowers, thoſe which grow upon the Side Branches, which are commonly fuller of Leaves than the Flowers on the main Stem, ſhould always be preſerved for Seeds.

The 34th Sort was diſcovered by Dr. *Houſtoun* in 1731, at *La Vera Cruz* in *New Spain*. This is an annual Plant, which riſes with an upright Stalk about a Foot high, and is garniſhed the whole Length with winged Leaves, each conſiſting of two or three Pair of Lobes, and terminated by an odd one: Each of theſe Lobes are Heart-ſhaped, and ſawed on their Edges; at the Top of the Stalk is produced one large Orange-coloured Flower, having a ſingle Empalement, cut into many ſlender Segments which end in Points: After the Flower is paſt, each Floret is ſucceeded by an oblong angular Seed, crowned with long Down. This Plant is propagated by Seeds, ſown on a moderate hot Bed in Spring; and when the Plants are fit to remove, they muſt be each planted in a ſmall Pot filled with rich Earth, and plunged into the Tan Bed, obſerving to ſhade them until they have taken new Root, as alſo to refreſh them with Water, and in warm Weather admit free Air to the Plants. When theſe Pots are filled with their Roots, the Plants ſhould be carefully ſhaken out; and after paring off the Outſide Roots, put into larger Pots, filled with light Earth, and plunged into the hot Bed again, where they may remain to flower and perfect their Seeds, for they will not thrive in the open Air. This Sort flowers in *July*; and the Seeds ripen in *September*.

The Seeds of the 35th Sort were ſent me from *South Carolina*, in 1742, which ſucceeded in the *Chelſea* Garden, where the Plants flowered the following Year; but the Seaſon proved too cold to ripen the Seeds, and the Plants being biennial, they periſhed in Winter.

This Plant produces many hairy oblong Leaves near the Root, which come out without any Order. They are from 4 to near 6 Inches long, and almoſt an Inch broad. From between theſe Leaves the Stalk ariſes immediately from the Root, 2 Feet and a Half high, ſending out ſeveral Side Branches; all theſe are garniſhed with hairy Leaves of the ſame Shape with thoſe at Bottom but ſmaller, and are placed alternately on the Branches, which they cloſely embrace, having no Foot Stalk. At the Top of the Stalk the Flowers are produced, which are large and of a yellow Colour, compoſed of many half Florets, which form the Border or Ray; the Diſk in the Center is compoſed of ſeveral Florets, each having a Pointal in the Middle, and attended by 5 ſlender Stamina, which do not extend beyond the Corolla. At the Bottom of the Pointal is placed the Embryo, crowned with a pappous Down, which ſerves to waft the Seeds abroad when they are ripe. Theſe are included in one common ſcaly Empalement.

The 36th Sort was diſcovered by Dr. *William Houſton*, in 1729, growing in Plenty in the ſandy Ground about *La Vera Cruz*, in *America* where he drew the Figure, and made a Deſcription of the Plant upon the Spot; which he ſent to *England* with the Seeds, ſome of which grew in the *Chelſea* Garden, and the Plants flowered the following Summer, but did not perfect Seeds.

It hath buſhy fibrous Roots, which creep in the Ground, and ſend out many ſlender round Stalks, which bend and incline to the Ground. Theſe are about four or five Inches long, deſtitute of Leaves, each ſuſtaining one Flower, in Shape and Size of thoſe of the common Field Daiſy, of a whitiſh purple Colour, but the Rays are narrower. The Diſk is compoſed of ſeveral Florets, which are ſucceeded by ſmall Seeds crowned with a pappous Down. The Empalement which includes the Flowers, is ſcaly.

This Plant is a Native of a warm Climate, therefore the Seeds muſt be ſown in a hot Bed, and the Plants require a Stove to maintain them through the Winter.

The 37th Sort is a Native of the *Cape of Good Hope*; this riſes with a ſlender woody Stalk about two Feet high, ſending out ſeveral weak Branches from the Side, reflexed and garniſhed their whole Length with ſmall oval Leaves which turn backward; at the Extremity of the Branches a ſingle Flower is produced, which hath white Rays and a yellow Diſk. Theſe appear in *February* and *March*, but do not produce Seeds here.

It is propagated by Cuttings, planted in *Auguſt*, in ſmall Pots filled with light ſandy Earth, and plunged into a moderate hot Bed of Tanners Bark, where they will take Root in about ſix Weeks, when they muſt be inured to the open Air. In Winter they ſhould be removed into an airy Glaſs Caſe, where they may enjoy as much Light and free Air as poſſible, but ſcreened from Froſt. This Plant is difficult to preſerve in Winter.

ASTERISCUS. *See* Buphthalmum.

ASTEROIDES, Baſtard Starwort. *See* Inula.

ASTRAGALOIDES. *See* Phaca.

ASTRAGALUS, Wild Liquorice, Liquorice Vetch, or Milk Vetch.

The *Characters* are,

It hath a Butterfly Flower, whoſe Empalement is of one Leaf, which is cut into five acute Segments at the Top. The Standard (or Vexillum) is upright, blunt and reflexed on the Sides; the Wings are oblong, and ſhorter than the Standard; the Keel is the ſame Length with the Wings, and bordered. It hath ten Stamina, nine of which are joined, and one ſtands ſingly; theſe are crowned by roundiſh Summits. At the Bottom of the Flower is ſituated a taper Germen, ſupporting an Awl-ſhaped Style, crowned by a blunt Stigma. The Germen afterward becomes a Pod having two Cells, each having a Row of Kidney-ſhaped Seeds.

The *Species* are,

1. ASTRAGALUS *caulefcens proſtratus leguminibus ſubtriquetris arcuatis foliis ovalibus pedunculo longioribus. L. S. P.* Stalky proſtrate Milk Vetch, with crooked Pods almoſt triangular, and oval Leaves longer than the Foot Stalk. Common wild perennial trailing Milk Vetch with yellow Flowers, ſometimes called Wild Liquorice.

2. ASTRAGALUS *cauleſcens procumbens, leguminibus ſubulatis recurvatis glabris. H. U.* Stalky trailing Milk Vetch, with ſmooth Awl-ſhaped Pods bending inward. Yellow annual Milk Vetch of *Montpelier*, with trailing Stalks.

3. ASTRAGALUS *cauleſcens, ſpicis cylindricis ſubſeſſilibus, calycibus leguminibuſque lanatis. Lin. Sp. Plant.* 755. Stalky Milk Vetch with cylindrical Spikes growing cloſe to the Stalks, and woolly Pods and Empalements. Taller Foxtail Milk Vetch of the *Alps*.

4. ASTRAGALUS *cauleſcens proſtratus, leguminibus ſubgloboſis inflatis mucronatis piloſis. Hort. Upſal.* 226. Milk Vetch with a proſtrate Stalk, and a globular ſwelling hairy Pod ending in a Point. Yellow perennial Milk Vetch, with a round double Pod reſembling a Bladder.

5. ASTRAGALUS *cauleſcens procumbens, leguminibus capitatis cordatis acutis reflexis complicatis. Lin. Sp. P.* Milk Vetch with trailing Stalks, and Pods growing in Heads, which are Heart-ſhaped, pointed, reflexed, and complicated. Larger *Spaniſh* Milk Vetch, with Pods like the Epiglottis, and a purple Flower.

6 ASTRAGALUS *ſubacaulos ſcapis folio longioribus, floribus laxè ſpicatis erectis. P. L.* Low Milk Vetch with Flower Stalks longer than the Leaves, and Flowers growing in looſe upright Spikes. Cock's-head with large Vetch Flowers of a purpliſh blue Colour, and Goat's-thorn Leaves.

7. ASTRAGALUS *cauleſcens procumbens, ſpicis pedunculatis, leguminibus priſmaticis rectis triquetris apice uncinatis. Hort. Up.* Milk Vetch with trailing Stalks, Spikes of Flowers with Foot Stalks, and upright triangular Pods ſhaped like a Priſm pointed at the Top. Trailing maritime annual Milk Vetch with broad Leaves and Flowers ſitting upon Foot Stalks.

8. ASTRAGALUS *ſubcauleſcens procumbens floribus ſubracemoſis erectis foliis tomentoſis. Lin. Sp. Plant.* 759. Low trailing Milk Vetch, with branching Flowers growing erect and woolly Leaves. Small hoary purple Milk Vetch.

9. ASTRAGALUS *acaulos ſcapis folia æquantibus leguminibus inflatis ſubgloboſis nudis. Lin. Sp. Plant.* 760. Low Milk Vetch with Flower Stalks as long as the Leaves, and naked globular ſwelling Pods.

10. ASTRAGALUS *cauleſcens erectus floribus glomeratis ſubſeſſilibus ex omnibus axillis foliaceis. Lin. Sp. P.* Milk Vetch with upright Stalks, and glomerated Flowers growing cloſe to them, proceeding from all the Wings of the Leaves.

11 ASTRAGALUS *cauleſcens ſcapis folio longioribus floribus laxe ſpicatis erectis, leguminibus arcuatis.* Stalky Milk Vetch with Flower Stalks longer than the Leaves, upright Flowers growing in looſe Spikes, and arched Pods. *Ægyptian* Milk Vetch, with Spikes of purple Flowers and incurved Pods.

12. ASTRAGALUS *cauleſcens diffuſus capitulis ſubſeſſilibus lateralibus leguminibus erectis ſubulatis acumine reflexis. H. C.* Milk Vetch, with diffuſed Stalks, Flower Heads growing cloſe to the Sides of the Stalks, and Awl-ſhaped upright Pods reflexed at their Points. Annual Milk Vetch with hairy Leaves and Pods, many of them growing cloſe to the Wings of the Leaves.

13. ASTRAGALUS *caule recto paniculato pedunculis folio longioribus floribus ſparſis. H. C.* Milk Vetch with an upright looſe ſpiked Stalk, and Flowers growing thinly, whoſe Foot Stalks are longer than the Leaf. Talleſt Eaſtern Milk Vetch with a Goat's-rue Leaf, and a ſmall yellowiſh Flower.

14. ASTRAGALUS *acaulos ſcapo erecto foliis longiore leguminibus ſubulatis inflatis villoſis erectis. H. U.* Low Milk Vetch, with upright Foot Stalks to the Flowers longer than the Leaves, and Awl-ſhaped upright ſwoln

hairy Pods. Hairy white unbranched Milk Vetch, with purple Violet Flowers growing in Spikes.

15. Astragalus *cauleſcens erectus lævis pedunculis ſpicatis leguminibus ovato-cylindricis ſtylo acuminatis. Lin. Sp. P.* Smooth upright ſtalky Milk Vetch, with ſpiked Foot Stalks, and oval cylindrical Pods ending in ſharp Points. Taller untrailing Milk Vetch, with a yellowiſh green Flower.

16. Astragalus *cauleſcens diffuſus leguminibus ſubcylindricis mucronatis foliolis ſubtus ſubvilloſis. L. Sp. P.* Milk Vetch with diffuſed Stalk, pointed cylindrical Pods. and the ſmall Leaves hairy on their under Side. *Canada* Milk Vetch with a yellowiſh green Flower.

17. Astragalus *cauleſcens erectus piloſus floribus ſpicatis leguminibus ſubulatis piloſis. Lin. Sp. Pl.* 756. Milk Vetch with hairy upright Stalks, Flowers growing in Spikes, and Awl-ſhaped hairy Pods. Upright hairy Milk Vetch, with yellow Flowers growing in Spikes.

18. Astragalus *incanus caulibus procumbentibus ſcapis folio æquantibus floribus glomeratis.* Hoary Milk Vetch with trailing Stalks, Foot Stalks equal with the Leaves, and glomerated Flowers.

19. Astragalus *cauleſcens incanus, leguminibus ſubulatis recurvatis incanis.* Hoary ſtalky Milk Vetch, with Awl-ſhaped recurved Pods which are hoary.

20. Astragalus *cauleſcens capitulis globoſis, pedunculis longiſſimis, foliolis emarginatis. H. C.* Stalky Milk Vetch with globular Heads, very long Foot Stalks, and the ſmall Leaves crenated at their Points.

The 1ſt Sort grows wild upon chalky Ground in many Parts of *England*, ſo is not often admitted into Gardens. The Root of this is perennial, but the Stalks decay every Autumn: It creeps at the Root, ſo that it is too apt to ſpread where it is ſuffered to grow. It flowers in *June*, and the Seeds ripen in *September*.

The 2d Sort is annual; the Branches of this trail upon the Ground on every Side the Root, which are ſtriated; the Leaves are winged, and are compoſed of about eight Pair of Lobes, terminated by an odd one; theſe are crenated at their Points. The Foot Stalk of the Flowers ariſe from the Wings of the Leaves, which is about three Inches long, garniſhed toward the Top with a few pale yellow Flowers riſing one above another; theſe are ſucceeded by oblong Pods, which bend in form of a Sickle, being round on their outer Side, but flatted on the oppoſite, ending in a Point, opening in two Cells, each having a Row of ſquare Seeds. It flowers in *June*, and the Seeds ripen in *September*. The Seeds of this ſhould be ſown in *April*, in the Place where they are to remain and require no other Care, but to draw the Plants out where they come up too thick, leaving them a Foot and a Half aſunder, and keep them clean from Weeds.

The 3d Sort is a biennial Plant, which grows naturally on the *Alps.* This riſes with an upright hairy Stalk near three Feet high, garniſhed with long winged Leaves, each having eighteen or twenty Pair of oval Lobes, terminated by an odd one. The Flowers are produced in large cylindrical Spikes from the Wings of the Leaves, ſitting very cloſe to the Stalks, which are entirely covered with Down, out of which the yellow Flowers juſt peep; theſe are ſucceeded by oval Pods ſhut up in woolly Empalements, and have two Cells containing three or four ſquare Seeds in each. It flowers in *June* and *July*, and the Seeds ripen in Autumn, ſoon after which the Plants decay. The Seeds of this ſhould be ſown in *April* on an open Border, where the Plants are deſigned to remain; and when the Plants come up, they ſhould be thinned, leaving them at leaſt two Feet aſunder, and keep them clean from Weeds, the 2d Year they will flower.

The 4th Sort hath a perennial Root which ſends out ſeveral ſtriated Stalks near three Feet long, which if not ſupported, bend toward the Earth; theſe are garniſhed with winged Leaves placed alternately, at two Inches Diſtance, which are compoſed of about ten Pair of oval ſmall Lobes, terminated by an odd one. The Flowers ariſe from the Wings of the Leaves, upon Foot Stalks two Inches long, in ſmall looſe Spikes, which are yellow, ſhaped like the reſt of this Genus, and are ſucceeded by hairy globular ſwelling Pods ending with a ſharp Point, opening in two Cells, in each of which are contained two or three hard reddiſh Seeds. It flowers in *July*, and the Seeds ripen in Autumn. This grows naturally in the South of *France* and *Italy*. It is eaſily propagated by Seeds which ſhould be ſown upon an open Border in Spring; and when the Plants come up, they muſt be thinned and kept clean from Weeds till Autumn, when they ſhould be tranſplanted to the Place where they are to remain. One or two of theſe Plants in a Garden by Way of Variety, may be admitted, but they have little Beauty.

The 5th Sort is annual. This ſends out two or three hairy trailing Branches, which are garniſhed with winged Leaves, compoſed of ten or twelve Pair of blunt Lobes, terminated by an odd one.: The Flowers come out from the Wings of the Leaves upon naked Foot Stalks, four or five Inches long, and are gathered into a round Head; theſe are ſhaped like the others, but are pretty large and of a deep purple Colour, which are ſucceeded by ſhort Pods rough on their Outſides, and when opened are ſhaped like a Heart, ending in a ſharp Point, containing three or four Seeds.

The Seeds of this ſhould be ſown on an open Border in *April*, where the Plants are to remain, and treated as the other annual Sorts before-mentioned. It flowers in *July*, and the Seeds ripen in Autumn. It grows naturally in *Spain* and *Portugal*, from whence I received the Seeds.

The 6th Sort is a perennial Plant, which grows naturally upon the Mountains in *Spain*, from whence I received it. This is a low Plant, ſeldom riſing with a Stem more than three Inches high, ſending out winged Leaves on every Side, compoſed of many Pairs of narrow Lobes, ſet very cloſe together on the Midrib, which is terminated by an odd one. The Flowers grow upon long Foot Stalks, which riſe above the Leaves; theſe are large and of a purple Colour, growing in a looſe Spike, they ſtand erect, and are ſucceeded by oblong crooked Pods opening in two Cells, filled with ſquare Seeds. It flowers in *June*, and the Seeds ripen in *Auguſt*. This is propagated by Seeds, which ſhould be ſown, and the Plants treated as the 4th Sort, but ſhould have a ſhady Situation and a ſtronger Soil.

The 7th Sort is annual; this ſends out ſeveral trailing Branches near two Feet long, garniſhed with winged Leaves, compoſed of about ten Pair of blunt Lobes, ſet thinly on the Midrib, terminated by an odd one: At the

Wing of each Leaf comes out a Foot Stalk near 2 Inches long, ſuſtaining 4 or 5 yellow Flowers at the Top, which are ſucceeded by triangular brown Pods, ſhaped like a Priſm, growing erect, and opening in 2 Cells filled with greeniſh ſquare Seeds. It flowers in *July*, and the Seeds ripen in Autumn, ſoon after which the Plants decay. This may be treated in the ſame Manner as the ſecond.

The 8th Sort is a perennial Plant, which grows naturally upon Hills in *England*, particularly in the North. This is a low Plant, ſeldom riſing more than 2 or 3 Inches high, having many winged Leaves compoſed of narrow woolly Lobes, placed cloſe on the Midrib; the Flowers are pretty large, of a purple Colour, growing in looſe Spikes. It flowers in *June*, and the Seeds ripen in *Auguſt*. This may be propagated as the 4th Sort, and ſhould have a ſhady Situation.

The 9th Sort hath a perennial creeping Root, ſending out Leaves on every Side, which are compoſed of many Pair of oval Lobes, terminated by an odd one; the Flower Stalks are as long as the Leaves, which ſupport a cylindrical Spike of yellow Flowers, which are ſucceeded by ſwollen Pods, opening in two Cells, containing ſeveral greeniſh Seeds. This may be propagated as the 4th Sort, and muſt have a ſhady Situation. It flowers in *June*, and grows naturally in *Siberia*.

The 10th Sort was diſcovered by Dr. *Tournefort* in the *Levant*, who ſent the Seeds to the Royal Garden at *Paris*, where they ſucceeded, from whence I was furniſhed with them. This ſends up Stalks near 3 Feet high, which are large at Bottom, and gradually diminiſh to the Top; the Leaves alſo at Bottom are very long, and diminiſh upward, ſo as to form a Sort of Pyramid; theſe are winged, and compoſed of many large oval Pair of Lobes, which are placed thinly on the Midrib, and are terminated by an odd one; the Flowers come out in Cluſters from the Wings of each Leaf, beginning near the Root where the Foot Stalks are the longeſt, and continuing upward moſt Part of the Stalk, diminiſhing in their Number. Theſe are large, of a bright yellow Colour, and are ſucceeded by cylindrical Pods opening in 2 Cells, and filled with ſquare yellow Seeds. It flowers in *July*, and in very favourable Seaſons will perfect Seeds in *England*. It is propagated by Seeds, which ſhould be ſown, and the Plants afterward treated, as hath been directed for the 4th Sort; with this Difference only, to plant theſe in a warm Border and a dry Soil, otherwiſe the Plants will not thrive well in this Climate. The 3d Year from Seed the Plants will flower, and continue many Years in a proper Soil.

The 11th Sort grows naturally in *Egypt*, from whence the Seeds were ſent to the Royal Garden at *Paris*, and Dr. *Juſſieu* ſent me Part of the Seeds: This is an annual Plant, which riſes with upright Stalks a Foot and Half high, which are thinly garniſhed with winged Leaves, compoſed of about 12 Pair of oval Lobes, terminated by an odd one; the Foot Stalks of the Flowers ariſe from the Wings of the Leaves, and are extended beyond them; theſe are terminated by looſe Spikes of yellow Flowers, which are ſucceeded by Sickle-ſhaped Pods. It flowers in *July*, and the Seeds ripen in the Autumn; ſoon after which the Plants decay. It may be propagated by Seeds, in the ſame Manner as hath been before directed for the annual Sorts, putting the Seeds in a warm Border and a dry Soil, where the Plants will perfect their Seeds very well.

The 12th Sort grows naturally in *Italy*, and the South of *France*, from whence I received the Seeds. This is an annual Plant, which ſends out ſeveral weak Stalks without any Order, which are garniſhed by winged Leaves, compoſed of 10 or 12 Pair of Lobes, and ſometimes terminated by an odd one; theſe are hairy, at the Foot Stalks of the Leaves the Flowers come out, in ſmall Cluſters, ſitting cloſe to the Sides of the Stalks, which are of a Copper Colour, and ſucceeded, by Awl-ſhaped pointed Pods growing erect, and reflected at their Points. This is propagated by Seeds, as the other annual Sorts before mentioned; it flowers in *July*, and the Seeds are ripe in Autumn.

The 13th Sort was diſcovered by Dr. *Tournefort*, in the *Levant*, who ſent the Seeds to the Royal Garden at *Paris*, where they ſucceeded, and produced new Seeds, ſo that all the *European* Gardens have been ſince ſupplied with it; this hath a perennial Root, which ſends out many upright Stalks upward of 5 Feet high, which are garniſhed with winged Leaves, compoſed of about 14 Pair of oval Lobes, terminated by an odd one; from the Wings of the Leaves the Foot Stalks of the Flowers ariſe, which are garniſhed with ſmall yellow Flowers, growing in looſe Spikes, and are extended beyond the Leaves; theſe are ſucceeded by very ſhort triangular Pods, ending in a Point, which open in two Cells, filled with Aſh coloured ſquare Seeds. This flowers in *June* and *July*, and the Seeds ripen in Autumn. It is propagated by Seeds, which may be ſown in the Spring, upon a Border of light Earth, and treated as the 4th Sort, till the following Autumn, when the Plants ſhould be removed to an open Situation, and a dry Soil, and when they have taken root, will require no farther Culture. I have a Root of this Sort growing in the *Chelſea* Garden, which is more than thirty Years old, and produces Plenty of Seeds every Year.

The 14th Sort grows naturally upon the Mountains in *Germany*; this never riſes with a Stalk, but ſends out diverſe winged Leaves from the Root, which are compoſed of many blunt Lobes, placed by Pairs, and terminated by an odd one; the Foot Stalks of the Flowers ariſe immediately from the Root, and are longer than the Leaves, being terminated by Spikes of blue Flowers, which are ſucceeded by ſwelling Awl-ſhaped Pods, erect and hairy, having two Cells filled with greeniſh Seeds. It flowers in *July*, and the Seeds ripen in Autumn. The Root is Perennial, and the Plant is propagated by Seeds as the 4th Sort, but ſhould have an open Situation.

The 15th Sort grows naturally in *Carolina*; this hath a perennial Root, but an annual Stalk, which decays in Autumn; from the Root ariſe ſeveral upright Stalks 3 Feet high, which are garniſhed with winged Leaves, compoſed of 18 or 20 Pair of oval ſmooth Lobes, and terminated by an odd one; from the Wings of the Leaves ariſe the Foot Stalks, which are terminated by Spikes of greeniſh yellow Flowers, ſucceeded by oval cylindrical Pods, to which adheres the Style, which extends beyond the Pods in a Point. This flowers in *Auguſt*, but unleſs the Seaſon is warm, ſeldom ripen their Seeds in *England*. It is propagated by Seeds, which ſhould be ſown upon a moderate hot Bed in the Spring, and when the Plants are fit to remove, they ſhould be each planted in a ſmall Pot filled with Earth from the Kitchen Garden, and plunged again into the hot Bed, to forward their making new Roots; when they are eſtabliſhed in the Pots, they muſt be inured to the open Air, and the End of *May* placed in a ſheltered Situation, where they may remain till *October*, when they ſhould be placed under a common Frame to ſhelter them in Winter; in Spring they may be turned out of the Pots, and planted in a warm Border, where they will thrive and flower; if the Winter proves very ſevere, a little old Tan ſhould be laid over the Roots, which will effectually preſerve them.

The 16th Sort grows in moſt Parts of *North America*; this hath a perennial Root, which ſends out many irregular Stalks about 2 Feet long, which are garniſhed with winged Leaves, compoſed of many Pair of oval Lobes, which are hairy on their under Side; from the Wings of the Leaves come out the Foot Stalks, ſupporting Spikes of greeniſh yellow Flowers, which are ſucceeded by cylindrical Pods, ending in a Point. This flowers in *July*, and the Seeds ripen the Beginning of *October*. It is propagated by Seeds, managed as thoſe of the 15th Sort, but the Plants are hardier, ſo will live through the Winter in a common Bed of light Earth without Covering.

The 17th Sort riſes with upright Stalks 2 Feet high, hairy, and garniſhed with winged Leaves, compoſed of many Pair of oval woolly Lobes, and terminated by an odd one; from the Wings of the Leaves ariſe the Foot Stalks, which are terminated by cloſe Spikes of yellow Flowers; theſe are ſucceeded by hairy Awl-ſhaped Pods, having two Cells, filled with brown Seeds. This flowers in *June*, and the Seeds ripen in Autumn: It grows naturally in *Siberia*, from whence the Seeds were ſent to Dr. *Amman*, at *Peterſburgh*, who communicated them to me. It is a perennial Plant, and propagated by Seeds, in the ſame Manner as the 4th Sort.

The 18th Sort is a biennial Plant: The Seeds were ſent me from *Spain*, where the Plant grows naturally. This ſends out many trailing Stalks, divided into ſmaller Branches, which are garniſhed with many Pair of narrow Lobes, terminated by an odd one; the Flowers are collected into Heads, which terminate the Foot Stalks, and are white; the Foot Stalks are about the ſame Length as the Leaves; the Pods are ſhort and triangular, and the whole Plant is covered with a ſilvery Down. The Seeds of this ſhould be ſown upon an open Bed of light Earth, where the Plants are to remain, and the Plants afterward treated as before directed for the annual Sorts; the 2d Year they will flower, and perfect their Seeds.

The 19th Sort grows upon the Hills near *Verona*, from whence I received it. This ſends up an upright Stalk, ſeldom more than ſix Inches high, garniſhed with ſmall winged hoary Leaves; the Foot Stalks ariſe from the Wings of the Leaves, ſupporting three or four pale Flowers, which are ſucceeded by Sickle-ſhaped hoary Pods. This is a biennial Plant, and ſhould be treated in the ſame Manner as the laſt.

The 20th Sort was diſcovered by Dr. *Tournefort* in the *Levant*, who ſent the Seeds to the Royal Garden at *Paris*. This hath a perennial Root, which ſends up ſeveral erect Stalks, garniſhed with winged Leaves, compoſed of ſeveral Pair of Lobes, which are indented at the Top: From the Wings of the Leaves come out long Foot Stalks, ſupporting a globular Head of purple Flowers; theſe are rarely ſucceeded by Pods in *England*. It flowers the End of *July*. It is propagated by Seeds, which ſhould be ſown upon a moderate hot Bed in the Spring, and the Plants treated as the 15th Sort.

ASTRANTIA. Maſterwort.

The *Characters* are,

It is a Plant whoſe Flowers grow in an Umbel; the general Umbel is compoſed of 4 or 5 ſmall ones. The Involucrum of the general Umbel is in 1 Species compoſed of 2 large trifid Leaves, and 2 entire; in another Species of ſeveral ſmall Leaves: The Involucrum of the ſmall Umbels is compoſed of many ſmall pointed Leaves, which are longer than the Umbels, are coloured and ſpread open. The Empalement of the Flower is permanent, erect, and cut into 5 ſhort acute Segments; the Flower is compoſed of 5 Petals, which are erect, bifid, and bend inward: It hath 5 Stamina the Length of the Petals, crowned by ſingle Summits; the oblong Germen is ſituated below the Receptacle, ſupporting 2 ſlender Styles, crowned by ſpreading Stigma; the Germen afterward becomes an oval blunt channeled Fruit, divided into 2 Parts, having 2 oblong oval Seeds incloſed in the Cover.

The *Species* are,

1. ASTRANTIA *foliis radicalibus quinquelobatis ſerratis, caulinis trilobatis acutis.* Maſterwort with the lower Leaves divided into 5 Lobes, which are ſawed, and thoſe on the Stalks cut into 3 acute Lobes. Greateſt Maſterwort with a purpliſh Involucrum.

2. ASTRANTIA *foliis quinquelobatis lobis tripartitis, Haller. Helv.* 439. Maſterwort with Leaves having 5 tripartite Lobes. Greater Maſterwort with a white Involucrum.

3. ASTRANTIA *foliis digitatis ſerratis. Lin. Sp. Plant.* 255. Maſterwort with fingered Leaves, which are ſawed. Smaller black Hellebore with a Sanicle Leaf.

The 1ſt Sort hath many ſpreading Leaves riſing from the Root, which are compoſed of 5 large Lobes, ſawed pretty deep on their Edges; from between theſe the Stalks ariſe near 2 Feet high, having at each Joint one Leaf deeply cut into 3 ſharp pointed Lobes; at the Top of the Stalk is produced the Umbel of Flowers, at the Bottom of which is ſituated the general Involucrum, compoſed of 2 long trifid Leaves, and 2 entire ones of the ſame Length. The ſmall Umbels ſtand upon long Foot Stalks or Rays; under which is placed the Involucrum, compoſed of many Spear-ſhaped pointed Leaves, which extend beyond the Rays, and are of a purpliſh Colour.

The 2d Sort hath much the Appearance of the 1ſt, ſo has been ſuppoſed to be only a Variety of it, but it differs from that in having 5 Lobes to the Leaves of the Stalks, which are much ſhorter, and rounder at the Point, than thoſe of the other. The general Involucrum of the Umbel is compoſed of ſhort narrow Leaves, and thoſe of the ſmaller Umbels are ſhorter and white.

The 3d Sort ſeldom riſes a Foot high; the Foot Stalks of the Leaves are 4 Inches long; the Leaves are divided into 8 Segments to the Bottom, and ſpread out like a Hand; theſe are deeply ſawed on their Edges, the Involucrum of the general Umbel is compoſed of ſeveral very narrow Leaves; the Foot Stalks of the ſeparate Umbels are very long and ſlender, and toward the Top do often divide into 3, each having a ſmall Umbel. The Involucrums of theſe ſmall Umbels are ſhort and white.

Theſe Plants are very hardy; they may be propagated either by ſowing their Seeds, or parting their Roots. If propagated from Seeds, they ſhould be ſown in Autumn, ſoon after they are ripe, on a ſhady Border; when the Plants come up, they ſhould be carefully weeded; and where too cloſe, ſome of them ſhould be drawn out, to allow Room for others to grow, until *Michaelmas*, when they ſhould be tranſplanted where they are to remain; which ſhould always be in a moiſt Soil, and a ſhady Situation. The Diſtance theſe Plants ſhould be placed, is 3 Feet, for their Roots will ſpread to a conſiderable Width, if they are permitted to remain long in the ſame Place. They require no other Culture but to keep them clear from Weeds, and every 3d or 4th Year to be taken up at *Michaelmas*, and their Roots parted and planted again. Theſe Plants are ſeldom preſerved but in Botanic Gardens, there being no great Beauty in their Flowers. They all grow naturally upon the *Alps*.

ATHAMANTA. *Lin. Meum. Tourn.* Spignel.

The *Characters* are,

It is a Plant with an umbellated Flower; the general Umbel ſpreads open, and is compoſed of many ſmall ones; the Involucrum of the great Umbel is compoſed of many narrow Leaves, which are ſhorter than the Rays; thoſe of the ſmall ones are narrow, and equal with the Rays: The Flowers of the great Umbel are uniform; thoſe of the ſmaller have 5 *inflexed Heart-ſhaped Petals, which are a little unequal, each Flower hath* 5 *ſlender Stamina, which are of the ſame Length with the Petals, and crowned by roundiſh Summits; the Germen is ſituated below the Receptacle, ſupporting* 2 *reflexed Styles, crowned by obtuſe Stigma; the Germen afterward becomes an oblong channeled Fruit, divided into* 2 *Parts, each containing one oval channeled Seed.*

The *Species* are,

1. ATHAMANTA *foliolis capillaribus, ſeminibus glabris ſtriatis. Hort. Cliff.* 93. Spignel with Hair-like Leaves, and ſmooth channeled Seeds. Spignel with Dill Leaves.

2. ATHAMANTA *foliolis linearibus planis hirſutis, petalis bipartitis, ſeminibus oblongis hirſutis. Lin. Mat. Med.* 143. Spignel with plain hairy Leaves, Petals divided into 2 Parts, and oblong hairy Seeds. *Daucus creticus. C. B. P.* Candy Carrot with very ſlender Fennel Leaves.

3. ATHAMANTA *foliis inferioribus nitidis, umbellis primordialibus ſubſeſſilibus, ſeminibus piloſis. Hort. Upſal.* 60. Spignel with ſhining under Leaves, the Umbels at firſt ſitting cloſe, and hairy Seeds. *Daucus ſecundus Siculus. Zan. Hiſt.* The 2d *Sicilian* Carrot with a Flixweed Leaf.

The 1ſt Sort is the common Spignel uſed in Medicine. This grows naturally in *Weſtmoreland*, and by the Inhabitants there is called Bald-Money, or Bawd-Money; by ſome it is called *Meu*. This is a perennial Plant, the Stalks riſe a Foot and a Half high, and are channeled; the Leaves are very ramoſe, and compoſed of many fine Hair-like Leaves, ſet pretty cloſe, of a deep Green; the Stalk is terminated by an Umbel of white Flowers, which are ſucceeded by oblong ſmooth Seeds.

This may be propagated by parting the Roots at *Michaelmas*, or from Seeds ſown ſoon after they are ripe; the Plants ſhould have a ſhady Situation and moiſt Soil. It flowers in *June*, and the Seeds ripen in *Auguſt*.

The 2d Sort is the *Daucus Creticus*, of which there are two Sorts, whoſe Seeds are indifferently uſed in the Shops, one of which is annual, but that here mentioned is a perennial Plant, which ſends out many Leaves, compoſed of Numbers of ſlender narrow Leaves like thoſe of Fennel, irregularly diſpoſed. The Flower Stalk riſes about two Feet high, ſending out many Branches, which are garniſhed their whole Length, with the ſame compound capillary Leaves, and at the Top are terminated by compound Umbels, compoſed of near twenty ſmall ones, which ſpread out every Way, theſe have white Flowers with five Petals, which are ſucceeded by oblong, hairy, channeled Fruit, divided into two Parts, containing one oblong hairy Seed.

This Sort is propagated by Seeds ſown in Autumn on an open Bed of light dry Ground; when the Plants come up in Spring, they ſhould be kept clean from Weeds, and thinned where they are too cloſe, ſo that they may have Room to grow till the following Autumn, when they ſhould be carefully taken up, and planted at about a Foot Diſtance in a Bed of light ſandy Earth, where the Roots will continue ſeveral Years, and annually flower, and produce ripe Seeds. It flowers in *June*, and the Seeds ripen in *September*. This grows naturally in *Candia*, but is rarely injured by Cold in this Country.

The 3d Sort is a perennial Plant; this ſends up from the Root ſeveral upright Stalks, near three Feet high, which are terminated by compound Umbels, theſe, at their firſt Appearance, are very cloſe and compact, but afterward ſpread open, and divide into ſeveral ſmaller Umbels, the Foot Stalks or Rays of theſe are ſhort and hairy. The Flowers are compoſed of five white Petals. which are not quite equal, and are ſucceeded by oblong, woolly Fruit, divided into two Parts, each containing one oblong channeled Seed.

This may be propagated as the former, and is equally hardy; it grows naturally in *Sicily*, and in *Italy*.

ATRACTYLIS. *Lin. Gen. Pl.* 837. Diſtaff Thiſtle.

The *Characters* are,

It hath a radiated, compound Flower, compoſed of many hermaphrodite Florets, included in a common ſcaly Empalement, without Spines. This hath a permanent Involucrum, compoſed of ſeveral narrow plain Leaves with ſharp Spines on their Sides. The hermaphrodite Florets which compoſe the Rays, or Border, are ſtretched out on one Side like a Tongue, ſlightly indented in five Parts. Thoſe which compoſe the Diſk, or Middle, are Funnel-ſhaped, and cut at the Top into five Parts; theſe have both five ſlender Stamina in each, which are ſhort, and crowned by cylindrical Summits; in thoſe of the Diſk is ſituated a ſhort crowned Germen, ſupporting a ſlender Style, crowned by a bifid Stigma. The Germen becomes a turbinated compreſſed Seed, crowned with a Plume of Down, ſhut up in the Empalement.

The *Species* are,

1. ATRACTYLIS *involucris cancellatis ventricoſis, linearibus dentatis calycibus ovatis, floribus floſculoſis. Lin. Sp. P.* Diſtaff Thiſtle with a bellied netted Involucrum, an oval indented linear Empalement, and floſculous Flowers. This is the *Cnicus exiguus*, &c. *Tourn. Inſt.* Small *Cnicus* with a netted Head, and woolly Seed.

2. ATRACTYLIS *foliis dentato-ſinuatis, flore radiato obvallato involucro patente, caule herbaceo. L. Sp. Plant.* 829. Diſtaff Thiſtle with ſinuated indented Leaves, a radiated Flower ſtrongly guarded by its ſpreading Involucrum, and an herbaceous Stalk. Lower purple prickly *Cnicus*.

3. ATRACTYLIS *flore acaule. Lin. Sp. Plant.* 829.

Diſtaff Thiſtle with a Flower without a Stalk.

4. Atractylis *foliis oblongo-ovatis denticulatis ſpinoſis calycibus patentibus caule fruticoſo. Hort. Cliff.* 295. Diſtaff Thiſtle with oblong oval, indented, prickly Leaves, a ſpreading Empalement, and a ſhrubby Stalk. This is the *Carthamus Africanus. Boerh.* Shrubby *African* Baſtard Saffron with an Ilex Leaf, and a golden Flower.

The 1ſt Sort grows naturally in *Spain*, *Sicily*, and other warm Parts of *Europe*. This is an annual Plant which ſeldom riſes more than eight or nine Inches high, with a ſlender Stem, thinly garniſhed with narrow hoary Leaves, having Spines on their Edges; at the Top of the Stalk there are two or three ſlender Branches ſent out, each being terminated by a Head of Flowers, like thoſe of the Thiſtle, with an Involucrum compoſed of ſeveral narrow Leaves, armed with Spines on their Side, and are longer than the Head of Flowers. The Empalement is curiouſly netted over, and is narrow at the Top, but ſwelling below, containing many Florets of a purpliſh Colour. Theſe are each ſucceeded by a ſingle downy Seed; it flowers in *July*, and, if the Seaſon is warm and dry, it will ripen its Seeds in *September*, but in cold Years never perfects Seeds here.

It is propagated by Seeds ſown upon an open Bed of light Earth, where the Plants are to remain, and will require no other Care but to keep them clean from Weeds, and thin the Plants where they riſe too cloſe.

The 2d Sort riſes with a Stalk near a Foot high, which is garniſhed with indented Leaves, having ſmall Spines on their Edges; the upper Part of the Stalk is divided into two or three ſlender Branches, each ſupporting a Head of purple Flowers, having Rays incloſed in a ſcaly Empalement. The Roots of this will live two or three Years; it flowers in *June*, but unleſs the Summer is warm and dry, it will not perfect Seeds in *England*. The Seeds ſhould be ſown where they are to remain, and will require no other Culture than the former. It grows naturally about *Madrid*, from whence I received the Seeds.

The 3d Sort grows naturally in *Italy*, and the *Archipelago*; the College of Phyſicians have placed this among the medicinal Simples, by the Title of Carline Thiſtle; the Root is perennial, and ſends out many narrow Leaves, which are deeply ſinuated, and armed with Spines on their Edges. Theſe lie cloſe on the Ground, and between them the Flower is ſituated, without Stalk, having many Florets, incloſed in a prickly Empalement. Thoſe on the Border are white, but thoſe which compoſe the Diſk are of a yellowiſh Colour. It flowers in *July*, but never perfects Seeds in *England*.

It is propagated by Seeds obtained from the Countries where it grows naturally; theſe ſhould be ſown upon a Border of light Earth, in a warm Situation, early in *April*, and when the Plants come up, and are fit to tranſplant, they ſhould be thinned, and thoſe which are drawn out, may be tranſplanted, leaving the others two Feet aſunder, after which the only Culture they require is to keep them clean from Weeds in Summer, and in Winter to cover the Roots with ſome old Tanners Bark, to prevent the Froſt from penetrating the Ground.

The 4th Sort grows naturally at the *Cape of Good Hope*; this riſes with a ſhrubby Stalk, near three Feet high, garniſhed with oblong Leaves, indented on their Edges, which have weak Spines at each Indenture; there are ſeveral weak Branches ſent out on the Sides, each of which are terminated by a ſingle Head of Flowers, incloſed in a common Empalement which ſpreads open, and are of a golden Colour, but are never ſucceeded by Seeds in *England*. This is propagated by Slips, or Heads, taken from the Flower Stalks in *June*, and planted in Pots filled with light Earth, and plunged into an old Bed of Tanners Bark, where the Heat is gone, and ſhaded with Mats in the Heat of the Day, until they have taken Root, after which Time they may be expoſed in the open Air till *October*, when they muſt be removed into Shelter, and, during the Winter, ſhould have little Water, and in Summer ſhould be expoſed with other hardy exotic Plants in a ſheltered Situation.

ATRAPHAXIS. *Lin. Gen. Plant.* 405. We have no *Engliſh* Name for this.

The *Characters* are,

The Flower hath a permanent Empalement, compoſed of two ſmall Leaves placed oppoſite, which are coloured. The Flower hath two roundiſh ſinuated Petals larger than the Empalement, which are permanent; it hath ſix capillary Stamina, which are the Length of the Empalement, crowned with roundiſh Summits; in the Center is ſituated a compreſſed Germen, having no Style, but crowned by two Stigma, the Germen afterward becomes a roundiſh compreſſed Seed ſhut up in the Empalement.

The *Species* are,

1. Atraphaxis *ramis ſpinoſis. Hort. Cliff.* 138. *Atraphaxis* with prickly Branches.

2. Atraphaxis *inermis. Lin. Sp. Plant.* 333. *Atraphaxis* without Spines. *Arbuſcula Africana. H. E.* 36. *African* creeping Shrub, with Leaves curled on their Sides.

The 1ſt Sort grows naturally in *Media*, from whence Dr. *Tournefort* ſent the Seeds to the Royal Garden at *Paris*, with the Title of *Atriplex orientalis*.

This is a Shrub which riſes four or five Feet high, ſending out many weak lateral Branches, which are armed with Spines; theſe are garniſhed with ſmall Spear-ſhaped Leaves of an Aſh Colour, which are ſmooth. The Flowers come out at the Ends of the Shoots in Cluſters, which conſiſt of two white Leaves tinged with purple; and are included in a two leaved Empalement of a white herbaceous Colour; theſe appear in *Auguſt*, but the Seeds never ripen here, ſo the Plant is propagated by Cuttings, and muſt be ſcreened from hard Froſt, which commonly deſtroys thoſe which are planted in the open Air.

The 2d Sort ſends out many ſlender Branches which trail on the Ground if not ſupported, theſe are garniſhed with ſmall oval Leaves, about the Size of thoſe of the Knot Graſs, but waved and curled on their Edges, embracing the Stalk half round at their Baſe, and placed alternate. The Flowers come out from the Wings of the Leaves, and have much the Appearance of an apetalous Flower, being compoſed of four herbaceous Leaves, two of which are the Empalement, the other two the Petals; in the Center is ſituated the compreſſed Germen, attended by ſix Stamina, but the Seeds are never produced in this Country. It flowers in *June* and *July*. This is a Native of the Country about the *Cape of Good Hope*, but has been ſeveral Years in the *Engliſh* Gardens, where it is allowed a Place more for the Sake of Variety than its Beauty. It may be eaſily propagated by Cuttings in Summer, and in Winter the Plants muſt be ſcreened from Froſt.

ATRIPLEX, Orach, or Arach.

The *Characters* are,

It hath female and hermaphrodite Flowers on the ſame Plant. The hermaphrodite Flowers have a permanent Empalement of five Leaves, which are oval, concave and have membranaceous Borders; they have no Petals, but five Awl-ſhaped Stamina, placed oppoſite to the Leaves of the Empalement, ſupporting double Summits. In the Center is placed the orbicular Germen, with a ſhort bipartite Style, crowned with a reflexed Stigma. The Germen becomes an orbicular compreſſed Seed, ſhut up in the five cornered Empalement. The female Flowers have a two leaved Empalement, which are large, plain, erect, and pointed. They have no Petals nor Stamina, but in the Center a compreſſed Germen, ſupporting a bibartite Style, crowned by a reflexed Stigma. The Germen becomes an orbicular compreſſed Seed, incloſed in the Heart-ſhaped Valves of the Empalement.

The *Species* are,

1. ARTRIPLEX *caule erecto herbaceo foliis triangularibus. Hort. Cliff.* 469. Orach with an upright herbaceous Stalk, and triangular Leaves. Pale green, or white Garden Orach.

2. ATRIPLEX *caule fruticoſo foliis deltoidibus integris. Hort. Cliff.* 469. Orach with a ſhrubby Stalk, and entire Leaves, ſhaped like the *Greek* Delta. Broad-leaved Orach, or ſhrubby Halimus, commonly called Sea Purſlane Tree.

3. ATRIPLEX *caule fruticoſo foliis obovatis. Flor. Suec.* 829. Orach with a ſhrubby Stalk and oval Leaves. Shrubby Sea Orach, or Halimus, called Sea Purſlane with a narrow Leaf.

There are ſeveral other Species of this Genus, ſome of which grow naturally in *England*, but as they are Plants of no Beauty, they are rarely admitted into Gardens, for which Reaſon I ſhall not enumerate them here.

The 1ſt of theſe Plants was formerly cultivated in the Kitchen Gardens, as a culinary Herb, being uſed as Spinage, and is now by ſome Perſons preferred to it; though, in general it is not eſteemed amongſt the *Engliſh*; but the *French* cultivate it for Uſe.

There are three or four Sorts of this, whoſe Difference is only in the Colour of the Plants; one is of a deep green, another of a dark purple, and a third with green Leaves and purple Borders. Theſe are ſuppoſed to be only accidental Varieties from the ſame Seeds, but in thirty Years cultivation of theſe Sorts, I have never yet obſerved them to vary. But as there is no other eſſential Difference I have not enumerated them.

Theſe Plants are annual, ſo muſt be ſown for Uſe early in the Spring, or at *Michaelmas*, ſoon after the Seeds are ripe; at which Time it generally ſucceeds beſt, and will be fit for Uſe at leaſt a Month earlier. Theſe Plants require no other Culture, but to hoe them when they are about an Inch high; leaving them about four Inches aſunder; and to deſtroy the Weeds. This muſt be done in dry Weather, otherwiſe the Weeds will take Root again, and render your Work of no Uſe. When your Plants are grown about four Inches high, it will be proper to hoe them a ſecond time, in order to clear them from Weeds; and, if you obſerve the Plants are left too cloſe in any Part, you muſt then cut them out. If this be well performed, and in dry Weather, the Ground will remain clean until the Plant is fit for Uſe. Where theſe Plants are ſown on a rich Soil, and allowed a good Diſtance, the Leaves will be very large, in which the Goodneſs of the Herb conſiſts. This muſt be eaten while young; for, when the Stalks become tough, it is good for nothing. Some few Plants of each Kind may be permitted to ſtand for Seed, to preſerve their Kinds, which will ripen in *Auguſt*, and may then be cut, and laid on a Cloth to dry; after which the Seeds may be beaten out, and put up for Uſe. The 1ſt Sort is ordered by the College of Phyſicians for medicinal Uſe.

The 2d Sort was formerly cultivated in Gardens as a Shrub; and, by ſome Perſons, they were formed into Hedges, and conſtantly ſheared to keep them thick; but this Plant is by no Means fit for ſuch Purpoſes, on many Accounts, for it grows too vigorous; the Shoots, in one Month, at the growing Seaſon of the Year, will be two Feet long, provided they have a good Soil; ſo that a Hedge of this Plant cannot be kept in tolerable Order, nor will it ever form a thick Hedge. But a worſe Inconvenience attends this Plant; for, in very hard Winters, it is often deſtroyed; as alſo, in very dry Summers, many of the Plants will decay, whereby there will become large Gaps in the Hedge.

But if this Plant is not proper for Hedges yet it may have a Place in Wilderneſs Quarters, where it will ſerve to thicken; and the ſilver-coloured Leaves will add to the Variety, among other Shrubs of the ſame Growth. This will grow eight or ten Feet high, and, if ſuffered to grow wild, without pruning, will ſpread ſeveral Feet in Compaſs, and will ſometimes produce Flowers.

It may be propagated by Cuttings, planted in any of the Summer Months on a ſhady Border, where, if they are duly watered, they will ſoon take Root, and be fit to tranſplant at *Michaelmas*, where they are to remain; for they do not ſucceed well in tranſplanting, eſpecially when they are grown pretty large and woody.

The 3d Sort grows wild in divers Parts of *England*, on the Sea Side, from whence the Plants may be procured; or it may be propagated by Cuttings, as the former Sort. This is a low under Shrub ſeldom riſing above two Feet and a half but becomes very buſhy. The Leaves of this Kind are narrow, and of a whitiſh Colour; but are not ſo white as thoſe of the former. This may have a Place amongſt other low Shrubs; and, if planted on a poor gravelly Soil, will abide ſeveral Years, and make a pretty Diverſity.

ATROPA. *Lin. Gen. Plant.* 222. *Belladonna. Tourn. Inſt. R. H.* 77. Deadly Nightſhade.

The *Characters* are,

The Flower hath a Permanent Empalement of one Leaf, cut into five Parts, it is Bell-ſhaped, the Tube is ſhort, and ſwells towards the Brim, where it ſpreads open, and is divided into five equal Parts. It hath five Awl-ſhaped Stamina riſing from the Baſe of the Petal where they join, but at the Top ſpread from each other, and are crowned with large Summits which ſtand upward. In the Center is ſituated an oval Germen ſupporting a ſlender Style, which is crowned by an oblong tranſverſe Stigma. The Germen afterward becomes a globular Berry having three Cells, ſitting on the Empalement, and filled with Kidney-ſhaped Seeds.

The *Species* are,

1. Atropa *caule herbaceo, foliis ovatis integris. Lin. Sp. Plant.* 181. Deadly Nightſhade with an herbaceous Stalk, and oval entire Leaves. This is the *Belladonna majoribus foliis & floribus. Tourn.* Deadly Nightſhade, with larger Leaves and Flowers. And the *Solanum lethale. Cluſ. Hiſt.* 2. 86. Common Deadly Nightſhade.
2. Atropa *caule fruticoſo. Lin. Sp. Plant.* 182. Deadly Nightſhade with a ſhrubby Stalk. This is the *Belladonna fruteſcens rotundifolia Hiſpanica. Tourn. Inſt. R. H.* 77. *Spaniſh* ſhrubby *Belladonna* with a round Leaf.
3. Belladonna *caule herbaceo, foliis ovatis nervoſis marginibus undulatis.* Nightſhade with an herbaceous Stalk, and oval veined Leaves waved on their Edges.

The 1ſt Sort grows wild in many Parts of *England.* I have obſerved it in *Woodſtock* Park in *Oxfordſhire*, and in great Abundance in *Uppark* in *Hampſhire.* This Plant hath a perennial Root, which ſends out ſtrong herbaceous Stalks of a purpliſh Colour, which riſe to the Height of 4 or 5 Feet, and are garniſhed with oblong entire Leaves, which toward Autumn change to a purpliſh Colour; the Flowers come out between the Leaves ſingly, upon long Foot Stalks; theſe are large, Bell-ſhaped, and of a duſky brown Colour on their Outſide, but are purple within. After the Flower is paſt, the Germen turns to a large round Berry, a little flated at the Top, and is firſt green, but when ripe turns to a ſhining black, ſitting cloſe upon the Empalement, and contains a purple Juice of a nauſeous ſweet Taſte, and full of ſmall Kidney-ſhaped Seeds. In ſome Places this Plant is called *Dwale*, but in general *Deadly Nightſhade*, from its Quality. It is rarely admitted into Gardens, nor indeed ſhould it be ſuffered to grow in any Places where Children reſort, for it is a ſtrong Poiſon; and there have been ſeveral Inſtances within a few Years paſt, of its deadly Quality, ſeveral Children being killed with eating the Berries, which are of a fine black Colour, and about the Size of a black Cherry, and not unpleaſant to the Taſte.

Mr. *Ray* gives an Account of the various Symptoms it produces, by what happened to a Mendicant Frier, upon his drinking a Glaſs of Mallow Wine, in which this Plant was infuſed: In a ſhort Time he became delirious, ſoon after was ſeized with a grinning Laughter, after that ſeveral irregular Motions, and at laſt a real Madneſs ſucceeded, and ſuch a Stupidity as thoſe that are ſottiſhly drunk have, which after all, was cured by a Draught of Vinegar.

Buchanan, in his *Hiſtory of Scotland*, gives an Account of the Deſtruction of the Army of *Sweno*, when he invaded *Scotland*, by mixing a Quantity of the Juice of theſe Berries with the Drink which the *Scots* by their Truce were to ſupply them with; which ſo intoxicated the *Danes*, that the *Scots* fell upon them in their Sleep, and killed the greateſt Part of them, ſo that there were ſcarcely Men enough left to carry off their King.

The 2d riſes with a ſhrubby Stem, to the Height of 6 or 8 Feet, and divides into many Branches garniſhed with round Leaves, in Shape like thoſe of the Storax Tree; theſe are placed alternately on the Branches. The Flowers come out between the Leaves upon ſhort Foot Stalks, ſhaped like thoſe of the former, but are much leſs, of a dirty yellowiſh Colour, with a few brown Stripes; theſe are never ſucceeded by Berries in *England.* It grows naturally in *Spain*, from whence the Seeds may be procured. It is propagated by Seeds, which ſhould be ſown in the Spring upon a very moderate hot Bed, juſt to bring up the Plants; when they are fit to remove, they ſhould be each put into a ſeparate ſmall Pot, filled with loamy Earth, and ſhaded until they take Root; then they may be placed with other hardy exoticks in a ſheltered Situation, and in *October* they muſt be removed into the Green-houſe. It flowers in *July* and *Auguſt.*

The Seeds of the 3d Sort were ſent me from *Campeachy*; this hath a perennial Root, which puts out ſeveral channeled herbaceous Stalks, which riſe about 2 Feet high, and toward the Top divide into 2 or 3 ſmall Branches; theſe are garniſhed with oval Leaves 4 Inches long and 3 broad, which have ſeveral tranſverſe Ribs on their under Side, which are prominent. The Flowers come out from between the Leaves on ſhort Foot Stalks, which are white, and ſhaped like thoſe of the common Sort, but are ſmaller. It flowers in *July* and *Auguſt*, but ſeldom ripens its Fruit in *England.* It is propagated by parting the Roots in Spring, and the Plants muſt be kept in the Bark Stove to have them thrive well in this Country.

AVENA. *Lin. Gen. P.* 85. *Tourn. Inſt.* Oats.

The *Characters* are,

It is diſtinguiſhed from other Corn, by the Grain growing in looſe Panicles.

Avena *calycibus diſpermibus ſeminibus lævibus. Hort. Cliff.* 25. Oats with 2 ſmooth Seeds in each Empalement. There are 3 Sorts of theſe Oats cultivated in *England*, *viz.* the white, the black, and the brown or red Oat, which are ſuppoſed to be only accidental Varieties; but where they have been many Years ſeparately cultivated, I have never obſerved them to alter. However, as their principal Difference is in the Colour of their Grain, I ſhall not enumerate them as diſtinct Species. There is alſo a naked Oat, which is ſometimes cultivated in the diſtant Parts of *England*, but is rarely ſeen near *London.*

The white Sort is the moſt common about *London*; the black is more cultivated in the Northern Parts of *England*, and is eſteemed a very hearty Food for Horſes; but the firſt makes the whiteſt Meal, and is cultivated where the Inhabitants live much upon Oat Cakes.

The naked Oat is leſs common than either of the others, in the Southern Parts of *England*; but in the North of *England*, *Scotland*, and *Wales*, it is cultivated in Plenty. This Sort is eſteemed, becauſe the Grain threſhes clean out of the Huſk, and need not be carried to the Mill to be made into Oatmeal or Griſt. An Acre of Ground doth not yield ſo many Buſhels of theſe, as of the common Oats, the Grain being ſmall and naked, and goes near in Meaſure; but what is wanting in the Meaſure, is ſupplied in Value.

The red Oats are much cultivated in *Derbyſhire*, *Staffordſhire*, and *Cheſhire*, but are rarely ſeen in any of the Counties near *London*; though, as they are a very hardy Sort, and give a good Increaſe, they would be well worth propagating, eſpecially for all ſtrong Lands.

The Straw is of a browniſh red Colour, as is alſo the Grain, which is very full and heavy, and eſteemed better Food for Horſes than either of the former Sorts.

Oats are very profitable, and abſolutely neceſſary, being the principal Grain which Horſes love; and are eſteemed the moſt wholſome Food for them, being ſweet, and of an opening Nature; other Grains being apt to bind, which is injurious to labouring Horſes: But if you feed them with this Grain ſoon after they are houſed, before they have ſweat in the Mow, or are otherwiſe dried, it is as bad on the other Hand, for they are then too laxative.

This Grain is a great Improvement to many Eſtates in the North of *England*, *Scotland*, and *Wales*; for it will thrive on cold barren Soils, which will produce no other Sort of Grain; it will alſo thrive on the hotteſt Land: In ſhort, there is no Soil too rich or too poor for it, too hot or too cold for it; and in wet Harveſts, when other Grain is ſpoiled, this will receive little or no Damage; the Straw and Huſks being of ſo dry a Nature, that if they are houſed wet, they will not heat in the Mow, or become mouldy; ſo is of great Advantage in the Northern Parts of *England*, and in *Scotland*, where their Harveſt is late, and the Autumns wet.

The Meal of this Grain makes tolerable good Bread, and is the common Food of the Country People in the North. In the South it is eſteemed for Pottage, and other Meſſes, and in ſome Places they make Beer of it.

The beſt Time for ſowing Oats is in *February* or *March*, according as the Seaſon is early or late; and ſometimes I have known it ſown in *April* upon cold Land, and has been early ripe. The black and red Oats may be ſown a Month earlier than the white, becauſe they are hardier.

Oats are often ſown on Land which has the former Year produced Wheat, Rye, or Barley. The common Method is to plough in the Stubble about the Beginning of *February*, and ſow the Oats, and harrow them in; but then they muſt be harrowed the ſame Way as the Furrows lay, for if it be done croſſways, the Stubble will be raiſed on the Surface; but this is not a good Method of Huſbandry, for when People have Time to plough the Stubble in Autumn, it will rot in Winter; and then giving the Land another Ploughing and a good Harrowing juſt before the Oats are ſown, it will make the Ground finer and better to receive the Grain. Moſt People allow 4 Buſhels of Oats to an Acre, but I am convinced 3 Buſhels are more than enough; the uſual Produce is about 25 Buſhels to an Acre, though I have ſometimes known more than 30 Buſhels on an Acre.

Oats are alſo ſown upon Land when it is firſt broken up, before the Ground is brought to a Tilth for other Grain, and is frequently ſown upon the Sward with one Ploughing; but it is much better to give the Sward Time to rot before ſowing, for the Roots of the Graſs will prevent thoſe of the Corn from ſtriking downward.

AVENUES are Walks of Trees leading to a Houſe, which are generally terminated by ſome diſtant Object.

Theſe were formerly more the Taſte than at preſent, there being few old Seats in the Country but have 1 or more of theſe Avenues; and ſome have as many of them as there are Views from the Houſe; but of late theſe are diſuſed; for nothing can be more abſurd, than to have the Sight contracted by 2 or more Lines of Trees, which ſhut out the View of the adjacent Grounds, whereby the Verdure and natural Beauties of the Country are loſt; and where the Avenues are of a conſiderable Length, they appear at each End to be only narrow Cuts through a Wood, which never can pleaſe any Perſon of real Taſte; and, when the Road to the Houſe is through the Avenue, nothing can be more diſagreeable; for in approaching to the Houſe, it is like going through a narrow Lane, where the Objects on each Side are ſhut out from the View; and when it is viewed from the Houſe, it at beſt has only the Appearance of a Road, which being extended to a Length in a ſtrait Line, is not near ſo beautiful as a common Road, which is loſt by the Turnings, ſo as ſeldom to be ſeen to a great Extent: But as theſe Avenues muſt be made exactly ſtrait, ſo when the Trees are grown to any Size, they entirely break the View, whatever Way the Sight is directed through them; and if this is in a Park, the Lawn of Graſs through which the Avenue is planted, is thereby entirely deprived of the Beauty which it naturally would afford, if left open and well kept: Therefore, whenever the Situation of a Houſe will admit of a large open Lawn in Front, the Road to the Houſe ſhould be carried round at a proper Diſtance; and, if it be carried ſometimes through Trees, and ſerpented in an eaſy natural Way, it will be much more beautiful than any ſtiff formal Avenue, how large ſoever made.

But as there may be ſome Perſons ſo much wedded to the old Way of laying out and planting Grounds, as to prefer Avenues to the moſt beautiful Diſpoſition of Lawns, Woods, *&c.* I ſhall mention the beſt Methods of deſigning and planting them:

The uſual Width allowed to theſe Avenues was generally as much as the whole Breadth of the Houſe; but it will be better if they are planted 12 or 14 Feet wider; becauſe when the Trees are grown to any conſiderable Size, they will ſpread and overhang, ſo will contract the View.

As for Avenues to Woods or Proſpects, *&c.* they ought not to be leſs than 60 Feet in Breadth; and becauſe ſuch Walks are a long Time before they are ſhady, it will be convenient to plant another Row on each Side, rather than to loſe the Statelineſs that the main Walk will afford in Time by being broad, where any Thing of a Proſpect is to be gained.

The Rows ſhould not be planted nearer one another than 35 or 40 Feet, eſpecially if the Trees are of a ſpreading Kind; and the ſame Diſtance, if they are for a regular Grove.

The Trees proper for planting Avenues, are the *Engliſh* Elm, the Lime Tree, the Horſe Cheſnut, the common Cheſnut, the Beach, and the Abele.

The *Engliſh* Elm is approved for all Places where it will ſucceed, which it will do in moſt Places, except in very wet or cold ſhallow Grounds; becauſe it will bear cutting, heading, lopping in any Manner whatſoever, and probably, with better Succeſs than any other Tree.

2dly, The Lime Tree; becauſe it will do well in any Soil, if the Bottom be not hot and gravelly; and becauſe of its regular Shape, the Agreeableneſs of its Shade, and the beautiful Colour of its Leaves.

3dly, The Horſe Cheſnut is alſo to be uſed in ſuch Places as are very well defended from ſtrong Winds; becauſe, wherever it grows freely, if it be not ſkilfully managed now and then by cutting, the Branches are ſubject to ſplit down. This Tree is valuable on Account of its quick Growth, the Earlineſs of its coming out, the Nobleneſs of its Leaves, and the Beauty of its Flowers, being a fine Tree both for Shade and Ornament. This delights in a ſtrong hearty Soil, but will do well in any tolerable Soil, if good Care be taken in the planting of it; but wherever theſe Trees are planted in Avenues, they ſhould be placed 24 Feet aſunder, that their Heads may have Room to ſpread, otherwiſe they will not appear ſo beautiful.

4thly, The common Cheſnut will do well in a proper Soil, and will riſe to a conſiderable Height, if planted cloſe together; but if it be planted ſingly, where the Tree can take its own natural Shape, it is rather inclined to ſpread and grow globous, than tall.

5thly, The Beech is recommended by ſome; but this ſeldom ſucceeds well after tranſplanting, without extraordinary Care; though it arrives to a very large Tree in many Places in *England*, where it grows naturally, but is the moſt tedious and troubleſome to raiſe, to any tolerable Size, in a Nurſey.

6thly, The Abele: This, indeed, grows more diſperſed and looſe in its Head than any of the former, and conſequently, is worſe for Defence; but yet is not to be left out from the Number of Trees for Avenues, becauſe it is the quickeſt in Growth of all the Foreſt Trees, and will thrive in almoſt any Soil, but particularly in wet Ground, where few of the before-mentioned Trees will thrive, and ſeldom fails in tranſplanting.

7thly, The Oak; but this is ſeldom uſed in planting Avenues, becauſe it requires ſo long a Time to raiſe it up to any tolerable Stature in the Nurſery Way; nor is it apt to thrive much after it has been tranſplanted, if at any Bigneſs.

As for the Alder, Aſh, Platanus, and Sycamore, they are but rarely uſed for planting Avenues.

The old Method of planting Avenues with regular Rows of Trees, has been much diſuſed of late Years, and a more magnificent Method of planting Avenues introduced; which is, to plant the Trees in Clumps or Platoons, making the Opening much wider than before; and place the Clumps of Trees at about 3 hundred Feet Diſtance from each other. In each of theſe Clumps they plant ſeveral Trees in an irregular Manner, but this is only to be practiſed where the Avenue is of a tolerable Length; for in ſhort Walks, it will not appear ſo ſightly as even Rows of Trees, eſpecially where the View on each Side is contracted; but where there is Room, this Method is to be preferred; for, as a Perſon rides through the Avenue, the Opening between the Trees to the Turf, where the Deer are feeding, is much more agreeable than in paſſing between ſtrait Rows of Trees. The Trees ſhould be planted 30 Feet aſunder in the Clumps, and a little Ditch thrown up round each Clump, with a Fence to prevent the Deer from coming to bark them.

AURANTIUM; the Orange Tree.

The *Characters* are,

The Empalement of the Flower is ſmall, of one Leaf, indented in 5 Parts. The Flower hath 5 oblong ſpreading Petals, and many Stamina, which are frequently joined in ſmall ſeparate Bodies at Bottom, and are crowned by oblong Summits. In the Center is ſituated the round Germen, ſupporting a cylindrical Style, crowned by a globular Stigma. The Germen becomes a globular fleſhy Fruit, compreſſed at both Ends, having a thick fleſhy Pulp, and divided into ſeveral Cells, each containing 2 oval callous Seeds.

The *Species* are,

1. AURANTIUM *foliis ovato-lanceolatis glabris.* Orange Tree, with oval Spear-ſhaped ſmooth Leaves. The common *Seville* Orange.

2. AURANTIUM *foliis lanceolatis acutis glabris.* Orange Tree, with pointed Spear-ſhaped ſmooth Leaves. This is the *Aurantium Sinenſe. F. Heſp.* The *China* Orange.

3. AURANTIUM *foliis lineari-lanceolatis glabris.* Orange Tree, with narrow Spear-ſhaped ſmooth Leaves. *Aurantium anguſto ſalicis folio dictum. Boerh. Ind. alt.* Orange Tree, with narrow Leaves called Willow-leaved Orange, and by ſome the *Turkey* Orange.

4. AURANTIUM *foliis ovato-lanceolatis craſſis lucidis, fructu maximo.* Orange Tree, with thick ſhining oval Spear-ſhaped Leaves, and a large Fruit. This is the *Aurantium fructu maximo Indiæ Orientalis. Boerh. Ind. alt.* The Pumpelmoes, or Shaddock.

5. AURANTIUM *pumilum foliis ovatis floribus ſeſſilibus.* Dwarf Orange Tree with oval Leaves, and Flowers growing cloſe to the Branches. Nutmeg Orange.

There are many Varieties of this, as there is of moſt other Fruits, which have ariſen from Culture; but thoſe here enumerated may ſtrictly be allowed to be diſtinct Species. The Varieties in the *Engliſh* Gardens are, 1. *The yellow and white ſtriped leaved Orange.* 2. *The curled leaved Orange.* 3. *The horned Orange.* 4. *The double flowering Orange.* And 5. *The hermaphrodite Orange.*

The *China* Orange is not ſo hardy as the *Seville*, therefore muſt be treated more tenderly, placing it in Winter in the warmeſt Part of the Green-houſe, and houſing it earlier in Autumn, otherwiſe the Fruit will all drop from the Trees. This Sort rarely produces good Fruit in *England*, nor are the Leaves of the Tree near ſo large or beautiful, as thoſe of the *Seville* Orange; therefore the latter ſhould be preferred, and only a Tree or two of the *China* Sort kept for Variety.

The Dwarf Orange is alſo tender, and the Leaves are very ſmall, growing in Cluſters; the Joints of the Branches are very near each other, and the Flowers of theſe grow very cloſe together, and appear like a Noſegay, the Branches being covered with them. This Sort, when in Flower, is proper to place in a Room or Gallery, to adorn them; the Flowers being very ſweet, will perfume the Air of the Place; but theſe are ſeldom to be found in good Health, becauſe they muſt be treated with more Care than the common Orange and Lemon Trees; as muſt alſo the Shaddock, otherwiſe the Fruit will always drop off in Winter. The *Pumpelmoes* was brought from the *Eaſt-Indies* by one Capt. *Shaddock*, from whom the Inhabitants of the *Weſt-Indies* gave this Fruit the Name. But the Fruit has greatly degenerated ſince it has been in the *Weſt-Indies*, by raiſing the Trees from Seeds; the greateſt Part of which produce harſh ſour Fruit, greatly inferior to the original Sort, the Fleſh or Pulp of which is red, whereas the greater Part of the Trees in *America* produce Fruit with a pale yellow Fleſh: If they would bud from the good Sort, they might have it in as great Plenty as they pleaſed; but there are few Perſons in that Part of the World, who underſtand the Method of grafting or budding Fruit Trees; and if they did, they are ſo negligent of their Fruits, *&c.* as ſeldom to give themſelves any farther Trouble, than to put the Seeds into the Ground, and leave them to grow as Nature ſhall incline.

In Proof of what I have here ſaid, I cannot omit to mention, that a few Years ago, I ſent two ſmall Trees of the true *Seville* Orange to *Jamaica*, where this Sort was wanting; and from theſe many other Trees were budded, which have produced Plenty of Fruit, ſome of which were ſent to *England* laſt Year; and although they were long in their Paſſage, yet they were greatly ſuperior to any of the ſame Kinds which are imported from *Spain* or *Portugal*; one of thoſe affording three Times the Quantity of Juice, that a Fruit of equal Size from either of thoſe Countries does.

All the Sorts of Orange Trees with ſtriped Leaves are tender, therefore muſt be placed in a warm Part of the Green-houſe in Winter, and muſt be treated with more Care than the common Sort, otherwiſe they will not thrive. Theſe are varieties which ſome Perſons are fond of, but they never produce good Fruit, nor are the Flowers produced in ſo great Plenty, therefore a few only ſhould be preſerved for the Sake of Variety.

The horned Orange differs from the other Sorts, in the Fruit dividing into Parts, and the Rind expanding in Form of Horns: This and the diſtorted Orange, are preſerved by ſome curious Perſons for Variety, but they are not ſo beautiful as the common Orange. There is alſo a great Variety of ſweet Oranges both in the *Eaſt* and *Weſt-Indies*, ſome of which are much more eſteemed than thoſe we now have in *Europe*; but as they are much tenderer, they will not thrive in this Country with the common Culture; therefore I ſhall not enumerate them, but ſhall proceed to give Directions for the Management of Orange Trees in *England*.

If you purpoſe to raiſe Stocks for budding of Oranges, you ſhould procure ſome Citron Seeds which were duly ripened; for the Stocks of this Kind are preferable to any other, both for Quickneſs of Growth, as alſo that they will take Buds of either Orange, Lemon, or Citron; next to theſe are the *Seville* Orange Seeds. The beſt Seeds are uſually to be had from rotten Fruits, which are eaſy to be procured in Spring; then prepare a good hot Bed, of either Horſe Dung or Tanners Bark; the laſt of which is much the better, if you can eaſily procure it. When this Bed is in a moderate Temper for Heat, you muſt ſow your Seeds in Pots of good rich Earth, and plunge them into the hot Bed; obſerving to give them Water frequently, and raiſe the Glaſſes in the great Heat of the Day, to give proper Air, leſt the Seeds ſhould ſuffer by too great Heat: In 3 Weeks Time your Seeds will come up, and if the young Plants are not ſtinted, either for Want of proper Heat or Moiſture, they will be in a Month's Time after their Appearance, fit to tranſplant into ſingle Pots: You muſt therefore renew your hot Bed, and having prepared a Quantity of ſmall Halfpenny Pots (which are about 5 Inches over at the Top), fill theſe half full of good freſh Earth, mixed with very rotten Cow Dung; and then ſhake out the young Plants from the large Pots, with all the Earth about them, that you may the better ſeparate the Plants without tearing their Roots; and having half filled the Pots with Earth, put a ſingle Plant into each of the ſmall Pots; then fill them up with the ſame Earth as before directed, plunging the Pots into the new hot Bed, giving them a good Watering to fix the Earth to their Roots, and obſerve to repeat the ſame very often (for this Plant, when in a hot Bed, requires much Water), but be ſure to ſcreen them from the Sun in the Heat of the Day. In this Method, with due Care, your Plants will grow to be 2 Feet high by *July*, when you muſt begin to harden them by Degrees, in raiſing your Glaſſes very high, and when the Weather is good, take them quite off; but do not expoſe them to the open Sun in the Heat of the Day, but rather take off the Glaſſes, and ſhade the Plants with Mats, which may be taken off when the Sun declines; for the violent Heat in the Middle of the Day would be very injurious to them while young. Toward the End of *September* you muſt houſe them, obſerving to place them near the Windows of the Green-houſe, to prevent the Damps from moulding their tender Shoots. During the Winter Seaſon they may be often refreſhed with Water, and in *March* or *April*, waſh their Heads and Stems, to clear them from the Filth that may have ſettled thereon, during their being in the Houſe; and you muſt alſo give them a gentle hot Bed in the Spring, which will greatly forward them; but harden them by the Beginning of *June*, that they may be in right Order to bud in *Auguſt*; when you ſhould make Choice of Cuttings from Trees that are healthy and fruitful, of whatever Kinds you pleaſe, obſerving that the Shoots are round; the Buds of theſe being much better and eaſier to part from the Wood, than ſuch as are flat. When you have budded the Stocks, you ſhould remove them into a Green-houſe, to defend them from Wet, turning the Buds from the Sun; but let them have as much free Air as poſſible, and refreſh them often with Water. In a Month's Time after budding, you will ſee which of them has taken; you muſt then untie them, that the binding may not pinch the Buds, and let them remain in the Green-houſe all the Winter; then in the Spring, prepare a moderate hot Bed of Tanners Bark; and, after having cut off the Stocks about 3 Inches above the Buds, plunge their Pots into the hot Bed, obſerving to give them Air and Water, as the Heat of the Weather ſhall require; but be ſure to ſcreen them from the Violence of the Sun during the Heat of the Day. In this Management, if your Buds ſhoot kindly, they will grow to the Height of 2 Feet or more, by *July*; at which Time you muſt begin to harden them before the cold Weather comes on, that they may the better ſtand in the Green-houſe the following Winter. The 1ſt Winter after their Shooting, you muſt keep them very warm; for, by forcing them in the Bark Bed, they will be ſomewhat tender; but it is very neceſſary to raiſe them to their Height in one Seaſon, that their Stems may be ſtrait: For the Trees, which are 2 or more Years growing to their heading Height, the Stems are always crooked. In the ſucceeding Years, their Management will be the ſame as in full grown Trees, which will be hereafter treated of: I ſhall therefore, now, proceed to treat of the Management of ſuch Trees as are brought over every Year in Cheſts from *Italy*; which is, indeed, by much the quicker Way of furniſhing a Green-houſe with large Trees; for thoſe which are raiſed from Seeds in *England*, will not grow ſo large in their Stems under 18 or 20 Years, as theſe will have when brought over; and although their Heads are ſmall when we receive them, yet in 3 Years, with good Management, they will obtain large Heads and produce Fruit.

In the choice of theſe Trees, obſerve the Difference of their Shoots and Leaves (if they have any upon them) to diſtinguiſh their different Sorts, for the Shaddock and Citrons always make much ſtronger Shoots than the Orange; for which reaſon the *Italian* Gardeners, who raiſe theſe Trees for Sale, generally propagate thoſe Sorts, and bring few of the *Seville* Orange Trees over, which are much more valuable, both for their Flowers and Fruit; alſo prefer thoſe that have two good Buds in each Stock (for many of them have but one, which will always produce an irregular Head): The Straitneſs of the Stem, Freſhneſs of the Branches, and Plumpneſs of the Bark, are neceſſary Obſervations.

When you are furniſhed with a parcel of Trees, prepare a moderate hot Bed of Tanners Bark, in Length and Breadth according to the Number of Trees to be forced; then put your Trees into a Tub of Water upright, about half way of the Stems, leaving the Head and upper Part of the Stem out of the Water, the better to draw and imbibe the Moiſture. In this Situation they may remain two or three Days (according to their Plumpneſs when you receive them); then take them out, and clean their Roots from all Filth, cutting off all broken or bruiſed Roots, and all the ſmall Fibres, which are quite dried by being ſo long out of the Earth; and ſcrub the Stems with a hard Hair Bruſh, cleaning them afterwards with a Cloath; then cut off the Branches about three Inches from the Stem, and having prepared a Quantity of good freſh Earth, mixed with very rotten Neats Dung, plant your Trees therein, obſerving never to put them into large Pots; for if they are but big enough to contain their Roots, it is ſufficient at firſt Planting; and be ſure to put ſome Potſherds and large Stones in the Bottom of each Pot, to keep the Holes from being ſtopped with Earth, that the Water may freely paſs off, and wrap ſome Haybands round their Stems, from Bottom to Top, to prevent the Sun from drying their Bark; then plunge theſe Pots into the Bark Bed, watering them well to ſettle the Earth to their Roots, frequently repeating the ſame all over their Heads and Stems, being very careful not to over water them, eſpecially before they have made good Roots; and obſerve to ſcreen the Glaſſes of your hot Bed from the Sun in the Heat of the Day.

If your Trees take to grow kindly (as there is little Reaſon to doubt of, if the Directions given be duly obſerved), they will have made ſtrong Shoots by the Beginning of *June*; at which Time ſtop their Shoots, to obtain lateral Branches to furniſh their Heads; now give them Air plentifully, and begin to harden them, that in the middle of *July* they may be removed into the open Air, in ſome warm Situation, defended from the great Heat of the Sun, and from Winds, that they may be hardened before Winter. About the End of *September* you ſhould houſe theſe Plants, ſeting them at firſt in the front of the Green-houſe, near the Glaſſes, keeping the Windows open at all Times when the weather will permit; and about the latter End of *October*, when you bring in the Myrtles, and other leſs tender Trees, you muſt ſet your Oranges in the warmeſt and beſt Part of the Houſe, placing lower Plants or Trees in the Front, to hide their Stems. During the Winter, let your Waterings be frequent, but give them not too much at a Time; for now their Heads are but ſmall, and therefore incapable to diſcharge too great a Quantity of Moiſture; and take great Care to guard them from Froſt.

In Spring, when you begin to take out ſome of your hardieſt Sorts of Plants, to thin your Houſe, waſh and cleanſe the Stems and Leaves of your Orange Trees, taking out the upper Part of the Earth in the Pots, filling them up with good freſh rich Earth, laying thereon a little rotten Neats Dung round the Outſide of the Pots; but do not let it lye near the Stem of the Trees; then place them at wider Diſtances in the Houſe, that the Air may circulate round their Heads; giving them Air diſcretionally, as the Weather grows warm, but do not remove them into the open Air until the middle or latter End of *May*, when the Weather is ſettled; for many Times when they are removed out too ſoon, the Mornings often proving cold, give them at leaſt a great Check which will change the Colour of their Leaves, and many Times kill the extreme weak Part of the Shoots. Let the Situation for your Orange Trees, during the Summer Seaſon, be as much defended from the Sun in the Heat of the Day, and ſtrong Winds, as poſſible, by tall Trees or Hedges; both of which, are very hurtful to them, if expoſed thereto.

As theſe Trees advance, it will be neceſſary in the Summer to ſtop ſtrong Shoots when they grow irregular, to force out lateral Branches to fill the Head; but do not pinch off the Tops of all the Shoots (as is the Practice of ſome), which will fill the Tree with ſmall Shoots, too weak to ſupport Fruit; but endeavour to form a regular Head, and obtain ſtrong Shoots, taking away weak trifling Branches where they are too cloſe.

During the Summer Seaſon, your Orange Trees will require frequent Waterings in dry Weather, eſpecially if they are large; therefore you ſhould endeavour to have the Water as near the Trees as poſſible, to ſave the Trouble of carrying it, which in a large Quantity of Trees, takes up much Time. Your Water ſhould be ſoft, and expoſed to the Air, but never add Dung of any Sort thereto; which, although by many frequently recommended, yet has always been found deſtructive to theſe, and all other Trees, if much uſed; it being like hot Liquors to human Bodies, which, at firſt taking, ſeem to add Vigour, yet certainly leave the Body weaker after ſome Time, than before.

Your Orange Trees will require to be ſhifted and new potted every other Year, therefore you muſt prepare a Quantity of good Earth, at leaſt a Year before you intend to uſe it, that it may be well mixed and perfectly rotten. The beſt Seaſon for this Work is about the End of *April*, that they may have taken freſh Root before they are removed out of the Green-houſe; and when this work is performed, it will be neceſſary to let them remain in the Houſe a Fortnight longer than uſual, to be well ſettled.

In performing this Work, after you have drawn the Trees out of the Pots, you muſt cut off all the Roots round the Outſide of the Ball of Earth, and take away all mouldy Roots (if any ſuch be); then with a ſharp Iron Inſtrument, get as much of the old Earth from between the Roots as poſſible, being careful not to break or tear the Roots; then ſet the Root of the Tree into a large Tub of Water for about a Quarter of an Hour, to ſoak the under Part of the Ball of Earth; and afterwards ſcrub the Stems of the Trees with a hard Hair Bruſh, cleaning them, and the Heads, with Water, and a ſoft woollen Cloth. Your Pots being prepared, with ſome Potſherds and large Stones in the Bottom, put ſome of your freſh Earth into the Pot, about 3 or 4 Inches thick; and having placed your Tree thereon, in the Middle of the Pot, upright, fill it up with the ſame rich Earth, preſſing it down hard with your Hands; then water the Tree all over the Head, with a Watering Pot that has a Roſe upon the Spout, to let the Water fall light and thick (as in a Shower of Rain); and in watering theſe Trees, do it in the ſame Manner, during the Time they abide in the Houſe after ſhifting; this will greatly refreſh their Heads, and promote their taking freſh Roots.

When you firſt ſet theſe Trees abroad after ſhifting, you ſhould place them near the Shelter of Hedges, and faſten their Stems to ſtrong Stakes, to prevent their being diſturbed by Winds; which ſometimes will blow freſh planted Trees out of the Pots, if too much expoſed thereto, and greatly injure their new Roots.

If old Orange Trees have been ill managed, and their Heads become ragged and decayed, the beſt Method to reſtore them, is to cut off the greateſt Part of their Heads early in *March*, and draw them out of the Tubs or Pots, and ſhake off the Earth from their Roots, cutting away all ſmall Fibres and mouldy Roots; and then ſoak and clean their Roots, Stems, and Branches, planting them into good Earth, and ſetting them into a hot Bed of Tanners Bark, as was directed for ſuch Trees as came from abroad, managing them in the ſame Manner: By this Method they will produce new Heads, and in 2 Years Time, become good Trees again. But if theſe are large Trees, and have grown in Tubs for ſeveral Years, your beſt Way will be to prepare a Parcel of rough Baſkets (ſuch as are uſed for baſketing Ever-greens, when ſent to a diſtant Place): Let theſe be ſomewhat leſs than the Tubs you deſign to plant your Trees into; then plant your Trees herein, plunging them into the hot Bed, and about the Beginning of *July*, when they have made good Shoots, you may remove them into the Tubs, with their Baſkets about them, filling the empty Space with the ſame good Earth. This will preſerve your Tubs from rotting in the Bark, and the Trees will do as well as if planted in the Tubs at firſt, provided you are careful in removing the Baſkets, not to diſturb their Roots; let them remain in the Green-houſe a Fortnight or three Weeks after planting, before you ſet them abroad.

Theſe Trees being new potted or tubbed every other Year, thoſe Years in which they are not ſhifted, you muſt in *April* obſerve to take out as much of the old Earth from the Tops of the Pots and Tubs, alſo round the Sides of them, as poſſible, without injuring the Roots, and fill them up with freſh Earth; you muſt alſo waſh and clean their Stems and Leaves from Filth, which will greatly ſtrengthen their Flowering, and cauſe them to ſhoot vigorouſly the following Summer.

In the Management of Orange Trees which are in good Health, the chief Care ſhould be to ſupply them with Water duly, and not (as is ſometimes practiſed) ſtarve them in Winter, whereby their Fibres are dried, and become mouldy, to the great Prejudice of the Trees; nor to give them Water in too great Abundance; but rather let their Waterings be frequent, and given in moderate Quantities. Obſerve alſo, that the Water has free Paſſage to drain off, for if it be detained in the Tubs or Pots, it will rot the tender Fibres of the Roots. During the Winter Seaſon, they muſt have a large Share of Air, when the Weather is favourable; for nothing is more injurious to theſe Trees than ſtifling them; nor ſhould they be placed too near each other in the Green-houſe; but ſet at ſuch Diſtance, that their Branches may be clear of each other, and the Air may circulate freely round their Heads. In Summer they ſhould be placed where the Winds are not violent, and to have the Morning and Evening Sun; for if they are too much expoſed to the Mid-day Sun, they will not thrive. The beſt Situation for them is near ſome large Plantation of Trees, which will break the Force of the Winds, and ſcreen them from the violent Heat of the Sun. In ſuch a Situation they may remain until the Beginning of *October*, or later, according as the Seaſon proves favourable; for if they are carried into the Green-houſe early, and the Autumn ſhould prove warm, it will occaſion the Trees to make freſh Shoots, which will be weak and tender, and ſo liable to periſh in Winter; and ſometimes it will occaſion their flowering in Winter, which greatly weakens the Trees: Nor ſhould they remain ſo long abroad as to be injured by Morning Froſts.

The beſt Compoſt for Orange Trees is two-thirds of freſh Earth from a good Paſture, which ſhould not be too light, nor over ſtiff, but rather a Hazel Loam; this ſhould be taken about 10 Inches deep with the Sward, which ſhould be mixed with the Earth to rot, and 1 3d Part of Neats Dung; theſe ſhould be mixed together, at leaſt 12 Months before it is uſed, obſerving to turn it over every Month, to mix it well, and to rot the Sward; this will alſo break the Clods, and cauſe the Mould to be finer. Before you make uſe of this Earth, you ſhould paſs it through a rough Screen, to ſeparate the great Stones and the Roots of the Sward; but by no Means ſift the Earth too fine; for this is very prejudicial to moſt Plants, but particularly to Orange Trees.

Of late Years there have been many of theſe Trees planted againſt Walls, and Frames of Glaſs made to fix over them in Winter; and ſome few curious Perſons have planted theſe Trees in the open Ground, and have erected moveable Covers to put over theſe Trees in Winter, which are ſo contrived as to be all taken away in Summer: Where theſe have been well executed, the Trees have made great Progreſs in their Growth, and produced a much larger Quantity of Fruit, which have ripened ſo well, as to be extremely good for eating. If theſe are planted either againſt walls with Deſign of training the Branches to the Walls, or in Borders at a ſmall Diſtance, ſo as to train them up as Standards, there ſhould be a Fire Place or two, in proportion to the Length of the Wall, and Flues carried the whole Length of the Wall, to warm the Air in very cold Weather, otherwiſe it will be very difficult to preſerve the Trees in very hard Winters alive; or, if they do live through the Winter, they will be ſo much weakened by the Cold, as not to be recovered the following Summer to a proper Strength for bearing; ſo that wherever theſe Trees are intended to be placed againſt or near old Walls, the Flues ſhould be built up againſt the Front, allowing four Inches

Thickneſs of the Brick Work, on each Side the Flues, obſerving to faſten this with Irons, at proper Diſtances, to ſecure it from ſeparating from the old Wall: The Manner of making theſe Flues is fully explained under the Article of Hot Walls. Where this is made, there will be no Hazard of loſing the Trees, be the Winter ever ſo ſevere, with a little proper Care; whereas, if this is wanting, it will require great Care and Trouble to cover and uncover the Glaſſes every Day, when there is any Sun; and if the Wall is not thicker than they are uſually built, the Froſt will penetrate through the Walls in ſevere Winters; ſo that covering and ſecuring the Glaſſes of the Front will not be ſufficient to preſerve the Trees, be it done with ever ſo much Care: Therefore the firſt Expence of the Walls will ſave great Trouble and Charge, and be the ſecureſt Method.

If the Ground is wet, or of a ſtrong Clay, ſo as to detain the Moiſture, the Borders ſhould be raiſed above the Level of the Ground, in Proportion to the Situation of the Place; for where the Wet lies in Winter near the Surface, it will greatly prejudice, if not totally deſtroy the Trees; ſo that Lime Rubbiſh ſhould be laid at leaſt 2 Feet thick, in the Bottom of the Border, to drain off the Wet; and the Earth ſhould be laid 2 and a half or 3 Feet thick thereon, which will be a ſufficient Depth for the Roots of the Trees. In theſe Borders there may be a few Roots of the *Guernſey* and *Belladonna* Lillies planted, or any other exotick bulbous-rooted Flowers, which do not grow high, or draw too much Nouriſhment from the Borders; and theſe, producing their Flowers in Autumn or Winter, will make a good Appearance, and thrive much better than if kept in Pots.

The Management of the Orange Trees in theſe Places, is nearly the ſame as hath been directed for thoſe in Pots or Tubs, excepting that the Borders ſhould be dug, and refreſhed with ſome very rotten Dung, every Year.

AURICULA URSI, Bear's Ear, or Auricula.

To enumerate the Diverſities of this Plant, would be almoſt impoſſible; for every Year produces vaſt Quantities of new Flowers, differing in Shape, Size, or Colour of the Flowers; and alſo in the Leaves of theſe Plants there is as great a Variety, ſo that the ſkilful Floriſt is capable of diſtinguiſhing many of the Sorts thereby.

But as it ſeldom happens, that ſuch of theſe Flowers as are at one Time in great Eſteem, continue to be regarded a few Years after, (there being ſtill finer or larger Flowers produced from Seeds, which are what the Floriſts chiefly ſeek after), it would be needleſs to mention any of them; wherefore I ſhall proceed to give the Characters of a good *Auricula.*

1. *The Stem of the Flower ſhould be lofty and ſtrong.*
2. *The Foot Stalk of the Flower ſhould be ſhort, that the Umbel may be regular and cloſe.*
3. *The Pipe or Neck of each Flower ſhould be ſhort, and the Flowers large, and regularly ſpread, being no ways inclinable to cup.*
4. *That the Colours are very bright, and well mixed.*
5. *That the Eye of the Flower be large, round, and of a good White, or Yellow; and that the Tube or Neck be not too wide.*

All the Flowers of this Kind, that want any of the above mentioned Properties, are now rejected by every good Floriſt; for as the Varieties every Year increaſe from Seeds, ſo the bad ones are turned out to make room for their Betters; but in ſome the Paſſion for new Flowers ſo much prevails, that, ſuppoſing the old Flower greatly preferable to a new one, if it is of their own raiſing, the latter muſt take Place of the old one.

In order to obtain good Flowers from Seeds, you muſt make choice of the beſt Flowers you have; which ſhould be expoſed to the open Air, to have the Benefit of Showers, without which they ſeldom produce good Seeds: The Time of their Ripening is in *June*, which you will eaſily know, by the Seed Veſſel turning to a brown Colour, and opening; you muſt therefore be careful leſt the Seeds be ſcattered out of the Veſſel, for it will not be all fit to gather at the ſame Time.

The Time for ſowing this Seed is commonly in *Auguſt*; but if it be ſown any Time before *Chriſtmas*, it will be Time enough.

The beſt Soil for this Seed is good freſh light ſandy Mould, mixed with very rotten Neats Dung, or very rotten Dung from the Bottom of an old hot Bed: With this you ſhould fill your Pots, Boxes, or Baſkets, in which you intend to ſow your Seeds; and having levelled the Surface of the Earth very ſmooth, ſow your Seeds thereon, covering it very lightly with rotten Willow Mould taken out of the Stems of decayed hollow Willow Trees; then cover the Box, &c. with a Net or Wire, to prevent the Cats, Fowls, &c. from ſcratching out, or burying the Seeds too deep; for whenever this happens, the Seed will remain a Year in the Ground before the Plants appear, if it ſhould grow at laſt; ſo that many Perſons never cover theſe Seeds, but leave them upon the Surface of the Earth, in the Boxes, for the Rain to waſh them into the Ground, which is often the beſt Method: Let theſe Boxes, &c. be placed ſo as to receive half the Day's Sun, during the Winter Seaſon; but in the Beginning of *March*, remove them where they may only have the Morning Sun till 10 of the Clock; for your young Plants will now ſoon begin to appear, which, if expoſed to one whole Day's Sun only, will be all deſtroyed.

During the Summer Seaſon, in dry Weather, often refreſh them with Water; but never give them too great Quantities at once. The *July* following, your Plants will be large enough to tranſplant, at which Time you muſt prepare a Bed, or Boxes, filled with the above mentioned Soil, in which you may plant them about 3 Inches ſquare; if in Beds, you muſt ſhade them every Day, till they are thoroughly rooted, alſo in very hot dry Weather; but if they are in Baſkets, or Boxes, they may be removed to a ſhady Place.

When the Seedling *Auriculas* are planted in Beds, ſome rotten Neats Dung ſhould be laid about 10 Inches under the Surface, and beaten down cloſe and ſmooth: This will prevent the Worms from drawing the young Plants out of the Earth, which they often do where this is not practiſed. This Dung ſhould be laid about a Foot thick, which will entirely prevent the Worms getting through it until the Plants are well eſtabliſhed in the Beds; and the Roots of the *Auriculas* will ſtrike down into the Dung by the Spring, which will make their Flowers ſtronger than uſual: Theſe Beds ſhould be expoſed to the Eaſt, and ſcreened from the South Sun.

When you have taken all your Plants, which are now come up, out of the Boxes or Pots, level the Earth gently again; for it often happens, that ſome of the Seeds will lie in the Ground two Years before they appear, eſpecially, if they were covered too deep when ſown, as was before obſerved.

The Spring following many of theſe Flowers will ſhew; when you may ſelect ſuch of them as have good Properties, which ſhould be removed each of them into a Pot of the ſame prepared Earth, and preſerved until the next Seaſon; at which Time you may form a Judgment of the Goodneſs of the Flower; but thoſe that produce plain coloured or ſmall Flowers, ſhould be taken out, and planted in Borders in the Out-parts of the Garden, to make a Shew, or gather for Noſegays, &c. the others, which do not produce their Flowers the ſame Year, may be taken up, and tranſplanted into a freſh Bed, to remain till you ſee how they will prove.

The Manner of propagating theſe Flowers when obtained, is from Offsets, or Slips, taken from the old Roots in *April*, when the Flowers are in Bloom: Theſe Offsets muſt be planted into ſmall Pots filled with the ſame Sort of Earth, as before directed for the Seedlings; and, during the Summer Seaſon, ſhould be ſet in a ſhady Place, and muſt be often (but very gently) refreſhed with Water: but in Autumn and Winter ſhould be ſheltered from violent Rains. The Spring following, theſe young Plants will produce Flowers, though but weak; ſoon after they are paſt flowering, you muſt put them into larger Pots, and the 2d Year they will blow in Perfection.

But, in order to obtain a fine Bloom of theſe Flowers, you muſt obſerve the following Directions.

1ſt, Preſerve your Plants from too much Wet in Winter, which often rots and ſpoils them; but let them have as much free open Air as poſſible; nor ſhould they be too much expoſed to the Sun, which is apt to forward their budding for Flower too ſoon; and the froſty Mornings, which often happen in *March*, deſtroy their Buds, if not protected therefrom. To prevent which, thoſe who are very curious, place their Pots in the Autumn, under a common hot Bed Frame; where, in good Weather, the Plants may enjoy the full Air, by drawing off the Glaſſes; and in great Rains, Snow, or Froſt, the Plants may be ſcreened, by covering them. Where this Method is practiſed with Judgment, the Flowers will be much ſtronger, and the Plants will increaſe faſter, than when they are expoſed abroad.

2dly, In the Beginning of *February*, if the Weather is mild, you muſt take off the upper Part of the Earth in the *Auricula* Pots, as low as you can without diſturbing their Roots, and fill up the Pots with freſh rich Earth, which will greatly ſtrengthen them for Bloom; as alſo prepare your Offsets for tranſplanting in *April*, by cauſing them to puſh out new Roots.

The Plants with ſtrong ſingle Heads always produce the largeſt Cluſters of Flowers; therefore the curious Floriſts pull off the Offsets as ſoon as it can be done with Safety to their growing, to encourage the Mother Plants to flower the ſtronger; they alſo pinch off the Flowers in the Autumn, where they are produced, and ſuffer them not to open, which weakens the Plants.

3dly, You muſt cover your Pots with Mats in froſty Weather, during the Time of their Budding for Flower, leſt the ſharp Mornings blight them, and prevent their blowing.

4thly, When your Flower Stems begin to advance and the Bloſſom Buds grow turgid, you muſt protect them from haſty Rains, which would waſh off their white mealy *Farina*, and greatly deface the Beauty of their Flowers; but at the ſame Time obſerve to keep them as much uncovered as poſſible, otherwiſe their Stems will be drawn up too weak to ſupport their Flowers (which is often the Caſe when their Pots are placed under Walls), and give them gentle Waterings to ſtrengthen them; but let none of the Water fall into the Center of the Plant, or among the Leaves.

5thly, When your Flowers begin to open, remove the Pots upon a Stage (built with Rows of Shelves, one above another, and covered on the Top, to preſerve them from Wet:) This ſhould be open to the Morning Sun, but ſheltered from the Heat of the Sun in the Middle of the Day: In this Poſition they will appear to much greater Advantage, than when the Pots ſtand upon the Ground; for, their Flowers being low, their Beauty is hid from us; but when advanced upon Shelves, we ſee them in full View: In this Situation they may remain until the Beauty of their Flowers is paſt; when they muſt be ſet abroad to receive the Rains, and have open free Air, in order to obtain Seeds, which will fail, if they are kept too long under Shelter. When your Seed is ripe, obſerve to gather it when it is perfectly dry, and expoſe it to the Sun in a Window upon Papers, to prevent its growing mouldy, and let it remain in the Pods till the Seaſon for ſowing it.

AURICULA URSI MYCONI. *See* Verbaſcum.

AZALEA. *American* upright Honeyſuckle.

The *Characters* are,

It hath a ſmall coloured Empalement which is permanent, and cut into five acute Parts at the Top. The Flower is Funnel-ſhaped, having a long naked Tube, cut into five Parts, the two upper Segments are reflexed backward, the two Sides are bent inward, and the lower one turns downward. It hath five ſlender Stamina of unequal Lengths, which have oblong erect Summits. The round Germen ſupports a long ſlender Style, crowned with an obtuſe Stigma; the Germen afterward becomes a roundiſh Capſule, having five Cells, which are filled with roundiſh ſmall Seeds.

The *Species* are,

1. Azalea *foliis margine ſcabris, corollis piloſo-glutinoſis. Lin. Sp. Plant.* 151. *Azalea* with Leaves having rough Edges, and the Petals of the Flower hairy and glutinous. *Virginian Ciſtus* with a Flower and Scent of Honeyſuckle. This is the *American* upright Honeyſuckle with a white Flower.

2. Azalea *foliis ovatis corollis piloſis ſtaminibus longiſſimis. Lin. Sp. Plant.* 150. *Azalea* with oval Leaves, hairy Flowers, and the longeſt Stamina. *Virginian Ciſtus* with a large Honeyſuckle Flower leſs ſcented, called red *American* upright Honeyſuckle.

The firſt of theſe, here mentioned, is a low Shrub, riſing with ſeveral Stems, near four Feet high, theſe are ſlender, ſtiff, and have a brown Bark. The Leaves come out in Cluſters at the Ends of the Shoots without Order. They are Spear-ſhaped, but narrow at their Baſe; their Edges are ſet with very ſhort Teeth, which are rough. The Flowers come out in Cluſters between the Leaves, at the Extremity of the Branches, which are white, with a Mixture of dirty yellow on their Outſide. They have a Tube an Inch long, and at the Top are pretty deeply cut into 5 Segments, the 2 upper are reflexed ; the 2 ſide ones are bent inward, and the lower is turned downward. There are 5 ſlender Stamina, which are a little longer than the Petals of the Flower, ſupporting oblong Saffron-coloured Summits. The Style is much longer than the Stamina, and crowned by an obtuſe Stigma. Theſe Flowers have much the Appearance of thoſe of the Honeyſuckle, and are as agreeably ſcented. They appear the Middle of *July*, but are not ſucceeded by Seeds in *England*.

The 2d Sort grows taller than the 1ſt, and in its native Country, frequently riſes to 15 Feet, but in *England* is never more than half that Height. This ſends out ſeveral Stems from the Root, which are garniſhed with oblong ſmooth Leaves, placed alternately, having Foot Stalks. The Flower Stalks ariſe from the Diviſion of the Branches, which are long and naked, ſupporting a Cluſter of red Flowers, which are tubulous, ſwelling at their Baſe like thoſe of the Hyacinth, and contracted at their Neck ; they are divided at the Top into 5 equal Segments, which ſpread open. The 5 Stamina, and the Style, are much longer than the Petals, and ſtand erect. This flowers about the ſame Time as the former, but is not ſo well ſcented.

Theſe Plants grow naturally in Shade, and upon moiſt Ground, in moſt Parts of *North America*, from whence many of the Plants have been ſent of late to *England*, and have produced their beautiful Flowers in many curious Gardens.

They muſt have a moiſt Soil, and a ſhady Situation, otherwiſe they will not thrive. They can only be propagated by Shoots from their Roots, and laying down their Branches, for they do not produce Seeds here, and if good Seeds could be obtained, they would be difficult to raiſe, and a long Time before they would flower. But when they are in a proper Situation, their Roots extend, and put out Shoots, which may be taken off with Roots, and tranſplanted. When any of them are laid down, it ſhould be only the young Shoots of the ſame Year, for the old Branches will not put out Roots. The beſt Time for this is at *Michaelmas*, and if they are covered with ſome old Tan, to keep out the Froſt, it will be of great uſe to them. The Autumn is alſo the beſt Time to remove the Plants, but the Ground about their Roots ſhould be covered in Winter to keep out the Froſt ; and if this is every Year practiſed to the old Plants, it will preſerve them in Vigour, and cauſe them to flower well.

AZEDARACH. *See* Melia.

AZEROLE, or L'AZAROLE. *See* Meſpilus.

B.

BACCA, *i. e.* a Berry, is a round Fruit, for the moſt Part ſoft, and covered with a thin Skin, containing Seeds in a pulpy Subſtance ; but, if it be harder, and covered with a thicker Skin, it is called *Pomum*, *i. e.* an Apple.

BACCHARIS, Ploughman's Spikenard, *vulgo*.

The *Characters* are,

The Flower is compoſed of many hermaphrodite and female Florets, which are included in one common, cylindrical, ſcaly Empalement. The Florets are equal, the hermaphrodite and female are intermixed. The hermaphrodite Florets are Funnel-ſhaped and quinquefid, theſe have 5 ſlender Stamina, crowned by cylindrical Summits, and an oval Germen, ſupporting a ſlender Style, crowned by a bifid Stigma. The Germen afterward becomes a ſingle ſhort Seed crowned with a long Down. The female Flowers have no Stamina, but in other Reſpects are the ſame.

The *Species* are,

1. BACCHARIS *foliis lanceolatis longitudinaliter dentato ſerratis. Lin. Hort. Cliff.* Ploughman's Spikenard with Spear-ſhaped Leaves, which are longitudinally indented and ſawed. This is the *Senecio Africana arboreſcens folio ſerrato. African* Tree Groundſel with a ſawed Leaf.

2. BACCHARIS *foliis obverſè ovatis, ſuperne emarginato-crenatis. Lin. Hort. Cliff.* Ploughman's Spikenard, with oval Leaves, whoſe upper Borders are ſawed. *Virginia* Groundſel Tree, with an Orach Leaf.

The 1ſt Sort was brought from the *Cape of Good Hope*, but grows naturally in *Peru*, and in other Parts of *America*. This Plant has been long preſerved by the Curious in their Gardens. Though there is little Beauty in the Flower, it grows to 5 or 6 Feet high, and is a manageable Shrub ; it may be propagated by Cuttings, which ſhould be planted in a ſhady Border during any of the Summer Months, or by Seeds ſown in a common Border in the Spring of the Year. Theſe Seeds ripen well in this Country ; and, if permitted to ſcatter on the Ground, the Plants will come up the following Spring. This Shrub is pretty hardy, and will live abroad in mild Winters, if planted in a warm Situation ; but is uſually kept in Green-houſes, and placed abroad in Summer ; it requires much Water in warm Weather.

The 2d Sort is pretty common in the Nurſeries about *London*, where it is uſually called the Groundſel Tree ; it is a Native of *Virginia* and other Parts of *North America*, it grows to be a Shrub of about 7 or 8 Feet high, and flowers in *October* ; the Flowers are white, and not very beautiful ; but the Leaves continuing green thro' the Year, has occaſioned this Shrub to be admitted into many curious Gardens.

This Sort may be propagated by Cuttings planted in *April* or *May*, upon a ſhady Border, and duly watered in dry Weather, until they have taken Root ; and, at *Michaelmas*, they will be fit to tranſplant where they are to remain ; this will live in the open Air, and never is injured by the Cold of our ordinary Winters ; but ſevere Froſt will ſometimes deſtroy them.

BACCIFEROUS [*Baccifer*, *Lat.* of *Bacca*, a Berry, and *fero*, to bear] is an Epithet applied to the Names of any Trees, Shrubs, or Plants, that bear Berries, as Briony, Lily of the Valley, Aſparagus, Butchers Broom, Nightſhade, Solomon's Seal, and many others.

BALAUSTIA. *See* Punica.

BALM. *See* Meliſſa.

BALSAMINA. The Balſamine, or female Balſamine. See Impatiens.

BALSAMITA. *See* Tanacetum.

BAMIA MOSCHATA. *See* Hibiſcus.

BANANA. *See* Muſa.

BANISTERIA. *Houſt. Mſſ. Lin. Gen.* 509. *Acer Scandens. Sloan. Cat.* 137. *Plum. Cat.* 18.

The *Characters* are,

It hath a ſmall permanent Empalement, cut into five acute Segments to the Bottom; the Flower hath five Petals, which are ſhaped like thoſe of the papilionaceous Tribe, but ſpread open, having in ſome Species one, in others two, and in ſome, ſeveral nectarious Glands. It hath ten ſhort Stamina, crowned with ſimple Summits. There are in ſome Species three, and in others but one Germen, each ſupporting a ſingle Style, crowned by an obtuſe Stigma, the Germen afterward become ſo many winged Fruit, like thoſe of the Maple, each containing a ſingle Seed.

The Title of this Genus was given by the late Dr. *Houſtoun*, in Honour to the Memory of Mr. *Baniſter*, a curious Botaniſt, who loſt his Life in the Search of Plants in *Virginia.*

The *Species* are,

1. Baniſteria *foliis ovato-oblongis rigidis racemis terminalibus caule fruticoſo ſcandente. Baniſteria* with oblong oval ſtiff Leaves, Spikes of Flowers terminating the Branches, and a ſhrubby climbing Stalk. Sir *Hans Sloane* titles it *Acer ſcandens foliis Laurinis. Cat. Jam.* 137. Climbing Maple with Bay Leaves.

2. Baniſteria *foliis ovatis glabris, floribus corymboſis terminalibus, caule fruticoſo ſcandente. Baniſteria* with oval ſmooth Leaves, Flowers growing in a Corymbus at the Extremity of the Branches, and a ſhrubby climbing Stalk. This is the *Acer ſcandens minus Apocyni facie folio ſubrotundo, Sloan. Cat.* 138. Smaller climbing Maple with the Appearance of Dogſbane, and a roundiſh Leaf.

3. Baniſteria *ſcandens & fruteſcens folio ſubrotundo flore ex aureo Coccineo. Houſt. Mſſ.* Climbing ſhrubby *Baniſteria* with a round Leaf, and a Flower changing from a gold to a ſcarlet.

4. Baniſteria *foliis cordatis nervoſis ſubtus incanis floribus lateralibus, caule fruticoſo ſcandente. Baniſteria* with nervous Heart-ſhaped Leaves, hoary on their under Side, Flowers growing from the Side of the Branches, and a ſhrubby climbing Stalk. Climbing *American* Maple with a roundiſh Leaf, hairy on the under Side.

5. Baniſteria *foliis ovato-oblongis acuminatis racemis lateralibus ſeminibus patentibus. Flor. Zeyl.* 176. *Baniſteria* with oblong oval pointed Leaves, Spikes of Flowers growing from the Side of the Branches, and ſpreading Seeds. Climbing Maple with Citron Leaves, and a blue Flower growing in Spikes.

6. Baniſteria *foliis pinnatis, foliolis oblongis obtuſis, floribus ſpicatis caule ramoſo aculeato. Baniſteria* with winged Leaves, whoſe ſmall Leaves are oblong and blunt, Flowers growing in a Spike, and a prickly branching Stalk.

7. Baniſteria *foliis pinnatis foliolis ovatis ſpicis lateralibus ſeminibus erectis. Baniſteria* with winged Leaves whoſe ſmall Leaves are oval, Spikes of Flowers growing from the Side of the Branches, and erect Seeds. This is the Climbing Maple with Leaves like Baſtard *Acacia*, and a purpliſh Flower.

The 1ſt grows naturally in *Jamaica*, from whence the late Dr. *Houſtoun* ſent me the Seeds. This hath a woody Stalk, which twiſts itſelf round the neighbouring Trees and riſes itſelf to their Top. It is garniſhed with Leaves as large as thoſe of the Bay Tree, and of the ſame Thickneſs, growing oppoſite; the Flowers are produced in long branching Spikes at the Ends of the Branches, which are yellow, compoſed of five ſmall Leaves; theſe are ſucceeded by two or three winged Seeds like thoſe of the greater Maple.

The 2d Sort grows naturally in *Jamaica*, and *Campeachy*. This hath ſlender winding Stalks, which riſe five or ſix Feet high, and are thinly garniſhed with oval ſmooth Leaves; the Flowers grow in a round Bunch at the Extremity of the Branches, which are of a browniſh yellow Colour, and are ſucceeded by winged Seeds like the former, but ſmaller, and have narrower Wings.

The 3d Sort was ſent me from *Carthagena*. This ſends out many Branches, which divide again into others, growing without Order, and become very buſhy upward, ſending out Tendrils by which they faſten themſelves to the neighbouring Trees, and mount to a great Height, theſe are garniſhed with oval ſtiff Leaves, ending in a Point. The Flowers are produced in looſe Spikes at the Ends of the Branches, which are firſt of a gold Colour, and fade to a ſcarlet. Theſe are ſucceeded by Seeds of the ſame Shape with the former, but are ſlender, thin, and for the moſt part ſingle.

The 4th Sort was ſent me from *Campeachy*, by Mr. *Robert Millar*; this hath many irregular climbing Stalks which faſten themſelves to the neighbouring Trees, and riſe to a great Height, theſe are garniſhed with Heart ſhaped Leaves, which are hairy on their under Side, where they have many tranſverſe Ribs. The Flowers come out thinly from the Side of the Branches, which are of a pale yellow Colour, and are ſucceeded by large winged Seeds, which are double.

The 5th Sort hath ſtrong woody Stalks, which twine about the Trees which grow near it, and riſe twenty Feet, high. Theſe are garniſhed with oblong pointed Leaves, like thoſe of the Bay Tree, growing by Pairs oppoſite; from the Wings of the Leaves, the Flowers are produced in looſe Spikes, upon long Foot Stalks, which are blue, and are ſucceeded by ſlender winged Seeds, which ſpread open from each other.

The 6th Sort was ſent me from *Tolu* in *New Spain.* This hath climbing Stalks, which divide into many Branches, garniſhed with long winged Leaves, compoſed of about twenty Pair of ſmall oblong blunt Pinnæ, each having a deep Furrow on the under Side. At the Wings of the Leaves the Stalks are armed with ſhort ſtrong Spines, a little crooked. The Flowers grow in long looſe Spikes at the End of the Branches, and are ſucceeded by ſingle Seeds as large at thoſe of the Greater Maple.

The 7th Sort hath ſtrong ligneous Stalks, covered with an Aſh-coloured Bark; they divide into many Branches garniſhed with winged Leaves, compoſed of five or ſix Pair of oval ſmall Leaves, nearly of the Size with thoſe of the common *Acacia*, but whitiſh on their under Side; from the Wings of the Leaves are produced ſlender Bunches of Flowers growing like thoſe of the Currant Buſh, and of a purpliſh Colour; theſe are ſucceeded by broad-winged Seeds, growing erect. It was ſent me from *Campeachy*, where it grows naturally.

These Plants are all of them Natives of warm Countries, ſo cannot be preſerved in *England*, unleſs they are kept in a Bark Stove. They are propagated by Seeds, procured from the Countries where they grow naturally; for they do not produce Seeds here. Theſe Seeds ſhould be fully ripe when gathered, and put into Sand, in which they ſhould be ſent to *England*, otherwiſe they will loſe their vegetative Quality; for from a large Parcel of theſe Seeds which were ſent over in Papers, as freſh as they could poſſibly arrive here, there was but few Plants raiſed; and thoſe did not appear till the ſecond Year; for theſe Seeds are not only in Shape like thoſe of the Maple, but alſo are of the ſame Quality, requiring to be ſown as ſoon as poſſible, after they are ripe, or preſerved in Sand till they are ſown, otherwiſe they rarely ſucceed; therefore when the Seeds arrive, they ſhould be immediately ſown in Pots, and, if it happens in Autumn or Winter, the Pots ſhould be plunged into a hot Bed of Tanners Bark, where the Heat is very moderate, and ſecured from Froſt and Wet, till Spring, when they muſt be removed to a freſh hot Bed, which will bring up the Plants; but if they ſhould not appear the 1ſt Year, the Pots ſhould be preſerved till the next Spring, to ſee if the Seeds will grow. When the Plants come up, they muſt be planted in ſeparate Pots, filled with light Earth, and plunged into the Bark Bed, after which they muſt be treated like other tender Plants from the ſame Countries.

BAOBOB. *See* Adanſonia.

BARBA CAPRÆ. *See* Spiræa.

BARBA JOVIS. *See* Anthyllis.

BARBAREA. *See* Eryſimum.

BARDANA. *See* Arctium.

BARLERIA.

The Name was given to this Genus of Plants by Father *Plumier*, in Honour of *Jacobus Barelier*, of *Paris*, a famous Botaniſt. We have no *Engliſh* Name for it; but the Inhabitants of *Jamaica* call it Snap-dragon.

The *Characters* are,

It hath a permanent Empalement, divided into four Parts, two large and two ſmaller, oppoſite. The Flower is nearly of the Lip Kind, of one Leaf, Funnel-ſhaped, and divided into five Parts at the Top, the upper Segment being broad and erect, the two Side ones narrower, and the under one which turns downward is divided into two. It hath four ſlender Stamina, two of which are very ſhort, the two upper are longer, and crowned by oblong Summits. In the Center is placed the oval Germen, ſupporting a ſlender Style crowned by a bifid Stigma. The Germen becomes an oblong quadrangular membranaceous Veſſel, very elaſtic, with two Cells, containing two roundiſh compreſſed Seeds.

The *Species* are,

1. BARLERIA *foliis ovatis, pedunculis dichotomis paniculatis. Barleria* with oval Leaves, and Flowers growing in Panicles, ariſing at the Diviſion of the Branches. This is the *Speculum Veneris majus impatiens. Sloan. Cat. Jam.* 59. Greater impatient *Venus* Looking-glaſs.

2. BARLERIA *foliis ovatis petiolis longiſſimis, floribus lateralibus, pedunculis multifloris. Barleria* with oval Leaves, having very long Foot Stalks, and Flowers growing from the Side of the Branches, many upon each Foot Stalk.

3. BARLERIA *ſpinis axillaribus foliis lanceolatis integerrimis floribus verticillatis ſeſſilibus. Barleria* with Spines on the Side of the Branches, Spear-ſhaped Leaves which are entire, and Flowers growing in cloſe Whorls round the Stalk. Thorny *Barleria* with a narrow Nightſhade Leaf and a blue Flower.

4. BARLERIA *ſpinis axillaribus quaternis foliis integerrimis. Lin. Sp. Plant.* 636. *Barleria* with Spines growing by fours from the Side of the Branches, and entire Leaves. This is the *Prionitis. Hort. Cliff.* and the *Coletta-veetla. Hort. Mal.* 9. p. 77.

The 1ſt Sort riſes with a hairy branching Stalk, four or five Feet high, garniſhed with two oval Leaves at every Joint, growing oppoſite; upon ſhort Foot Stalks, at every Diviſion of the Branches, comes out a long Foot Stalk, which divides into many ſmaller, and at each Diviſion of theſe, is placed a ſingle Flower without Foot Stalk, which hath a long Tube, of a pale Colour, but is ſpread open at the Top, where it reſembles one of *Tournefort*'s labiated Flowers; the upper Segment being broad, and ſhaped like the *Galea*, or Helmet, the two lateral Segments are narrow, and the under one is bent downward, repreſenting the under Lip, and is cut into two Parts. This is of a fine blue Colour. After the Flower is paſt, the Germen becomes an oblong membranaceous Capſule having two Cells, each containing two compreſſed roundiſh Seeds. This Seed Veſſel is very elaſtick, and throws out the Seeds with Violence on their being touched when ripe.

The 2d Sort riſes ſix or ſeven Feet high, with an upright Stalk, ſending out many lateral Branches, from the Bottom upward, ſo as to form a Sort of Pyramid; the Leaves are oval, and grow oppoſite upon very long Foot Stalks at every Joint. The Flowers grow on branching Foot Stalks, which come out from the Wings of the Leaves, each ſtanding on a ſhort ſeparate Foot Stalk, about Half an Inch long; theſe are ſucceeded by elaſtic Seed Veſſels, like the former.

The 3d Sort riſes with upright ſquare Stalks, three Feet high, which are garniſhed with two oblong entire Leaves at every Joint, above which the Flowers come out in Whorls ſurrounding the Stalks, and under each Whorl there are ſix ſharp Spines, which are as long as the Empalement of the Flowers. Theſe Joints are about three Inches Diſtance, the Flowers are blue, and have more of the Form of the labiated Flowers, than any of the other Species. I received this from *Panama*.

The 4th Sort has been long in the curious Gardens of *Holland*, but not many Years in *England*. This ſends out many ſlender Stems from the Root, which riſe five Feet high, and are garniſhed with oval pointed Leaves, two growing oppoſite at each Joint, which are attended by four long Spines ſtanding croſs-ways. This Plant hath not yet flowered in *England*, though there are large Plants of it in the *Chelſea* Garden.

The three 1ſt Sorts grow naturally in both *Indies*, but the 4th was brought from *Malabar* to the *Dutch* Gardens, and from thence to the Gardens in *England*, where it is at preſent but in very few Collections.

The three 1ſt are raiſed by Seeds, which they annually produce in Plenty; if they are not carefully watched and gathered as they ripen, their Pods burſt open and diſperſe the Seeds; but if they fall on the neighbouring Pots, they will riſe and furniſh young Plants.

The Roots of theſe will continue three or four Years, but after the ſecond Year, they grow too rambling, and
the

the lower Parts of the Branches naked, ſo are not ſo ſightly as the young Plants; therefore a Succeſſion ſhould be provided, and the old ones turned out. They are propagated by Seeds, which, will ſow themſelves, but where you ſave the Seeds or receive them from abroad, they muſt be ſown upon a hot Bed in Spring; and when the Plants are fit to remove, they muſt be each planted in a ſeparate Pot, and plunged into a hot Bed of Tanners Bark, where they muſt conſtantly remain, and are managed as other tender Exoticks from the ſame Countries, giving them Water frequently in Summer, and letting the freſh Air to them every Day in warm Weather, but in Winter they ſhould have little Water, and be kept warm. They flower in *June*, *July*, and *Auguſt*, and their Seeds ripen ſoon after.

The 4th Sort is only propagated by parting its Roots for it never produces Seeds here. It thrives much better in the Bark Stove, than upon Shelves in the dry Stove; for although the Plants may be preſerved in the latter, yet they will not make half the Progreſs as thoſe which are kept in the Tan Bed. This Sort requires Plenty of Water in Summer, and in Winter muſt be often refreſhed with a little at a Time.

BARTRAMIA. *Lin. Gen. Plant.* 480. The Title of this Genus of Plants was given by Dr. *Linnæus*, in Honour of Mr. *John Bartram* of *Penſylvania*, who has furniſhed the *European* Gardens with many rare Plants; and has made many curious Obſervations on the Growth of Plants and Trees in that Country, ſome of which will be exhibited in this Work.

The *Characters* are,

The Empalement is cut into five narrow Segments, each having a Beard at their Point. The Flower hath five Petals, which are erect and the Length of the Empalement, but ſpread open above and obtuſe: It hath ten ſlender Stamina the Length of the Tube, crowned by roundiſh Summits. In the Center is ſituated the round Germen, ſupporting a ſlender Style, crowned by a ſimple Stigma. The Germen becomes a globular Fruit, echinated on every Side, and breaking into four Parts, each having a ſingle Seed, convex on the Outſide, and angular on the inner where they join.

We know but one Species of this Genus at preſent, *viz.*

BARTRAMIA. *Flor. Zeyl.* 174. *Bartramia.* This is the *Triumfetta fructu echinato minore. Houſt. Mſſ. Triumfetta* with a ſmaller echinated Fruit. And by *Petiver*, *Agrimonia Maderaſpatana, folio rotundo ſingulari ſubtus incano. Gaz.* 31. *Tab.* 24. *Fol.* 10. *Agrimony* of *Madraſs*, with a ſingle round Leaf, hoary on the under Side.

This Plant grows naturally in both the *Indies*. I received the Seeds from *Panama*, and the late Dr. *Houſton* found it near *Carthagena*. It riſes with a ſoft Stem about four Feet high, dividing into ſeveral Branches at the Top, which are garniſhed with roundiſh angular Leaves, ſoft like thoſe of Mallow, and a little hoary on their under Side. The Flowers are produced at the Wings of the Leaves, each having five ſmall yellow Petals, which form a ſhort Tube at their Baſe, but ſpread open above the Empalement. Theſe are ſucceeded by globular Frnit, armed on every Side with Spines like thoſe of *Agrimony*.

It is a Native of very warm Countries, ſo will not thrive in *England*, but in a warm Stove. It is propagated by Seeds, which often ripen here; theſe muſt be ſown on a hot Bed in Spring, and when the Plants are fit to remove, they muſt be each planted in a ſmall Pot, filled with light rich Earth, and plunged into the Bark, treating them as other tender Plants from the ſame Countries, always keeping them in the Bark Stove, and not letting them have too much Wet in Winter. The third Year from Seed they will produce Flowers, and the Plants will continue ſeveral Years, and flower annually.

BASELLA, or climbing Nightſhade from *Malabar*.

The *Characters* are,

The Flower hath no Empalement; it is ſhaped like a Pitcher, fleſhy at the Baſe and ſwelling, but cloſed toward the Brim, where it is divided into ſix Parts, two of which are larger than the others. It hath five Awl-ſhaped Stamina, which are equal, and faſtened to the Petal, crowned with roundiſh Summits. The globular Germen which is ſituated in the Center, ſupports three ſlender Styles, crowned by oblong Stigma. The Petal of the Flower remains, and incloſes a roundiſh fleſhy Berry, including one round Seed.

The *Species* are,

1. BASELLA *foliis rotundo-cordatis carnoſis. Baſella* with round Heart-ſhaped fleſhy Leaves. This is the *Cuſcuta foliis ſubcordatis. Hort. Cliff.* 39. And the *Baſella. Hort. Mal.* Climbing Nightſhade of *Malabar*.

2. BASELLA *foliis oblongis flaccidis obtuſis. Baſella* with oblong blunt flaccid Leaves. This is the *Baſella Sinica*, or *China Baſella*, with a ſmaller Fruit.

The 1ſt Sort has thick ſtrong ſucculent Stalks and Leaves, which are of a deep purple Colour. The Plant requires to be ſupported, for it will climb to the Height of 8 or 10 Feet, and produce a great Number of Side Branches, which will twiſt round Stakes, and climb to a great Height, provided the Plants are preſerved in the Stove; for if they are expoſed to the open Air, they will not grow very large, nor will they perfect their Seeds, except in very warm Seaſons; but if placed in the Bark Stove, they will often live through the Winter, and produce many Flowers and Seeds. The Flowers have no great Beauty, but the Plant is preſerved for the odd Appearance of the Stalks and Leaves.

There is a Variety with green Stalks and Leaves, the Flowers are of a whitiſh green Colour, tipped with purple on their Edges, but in all other Reſpects the ſame, ſo is ſuppoſed to be only a ſeminal Variation.

The Seeds of the 2d Sort I received from Dr. *Juſſieu*, of *Paris*, from which I obtained two Varieties; one with purple Stalks and Leaves, and the other, Leaves variegated with white; but both retain their ſmall Stalks, and oblong flaccid Leaves, ſmaller Flowers and Fruit, in which they eſſentially differ from the firſt.

Theſe Plants are propagated by Seeds, ſown in a hot Bed in Spring; when the Plants are fit to remove, they ſhould be each planted in a Pot filled with rich Earth, and plunged into the Tan Bed, where they muſt be treated as other tender Exotics. They may alſo be propagated by Cuttings, which ſhould be laid to dry a Day or two after they are cut off, that the Wound may heal, before they are planted, otherwiſe they will rot. Theſe Cuttings muſt be planted in Pots filled with light freſh Earth, and plunged into a moderate hot Bed of Tanners Bark, where they will take Root in a Fortnight or three Weeks Time, when they ſhould be treated as the ſeedling Plants. But as theſe riſe ſo eaſily from Seeds, they are ſeldom propagated any other Way, becauſe they are Plants of ſhort Duration. They flower from *June* to Autumn, and the Seeds ripen in *November* and *December*.

As Theſe Plants climb to a conſiderable Height, and ſend forth a great Number of Branches, they ſhould have a Place near the Back of the Stove, where they may be faſtened to it, or trained up to a Trelliſe; otherwiſe they will twiſt about whatever Plants ſtand near them, which will be very injurious to the other Plants; whereas, when they are regularly trained to a Trelliſe, they will have a good Effect in adding to the Variety.

From the Berries of the 1ſt Sort I have ſeen a beautiful Colour drawn, but when uſed for Painting, did not continue long, but changed to a pale Colour; though I believe there might be a Method invented, to fix this beautiful Colour, ſo as to become very uſeful: I have been aſſured, that the Juice of theſe Berries has been uſed for ſtaining Callicoes in *India*.

BASILICUM, or BASIL. *See* Ocymum.

BASTERIA. *Nov. Gen.* All-ſpice.

As this Plant had no proper Title, I have given it this in Honour of my worthy Friend Dr. *Job Baſter*, *F. R. S.* of *Zurick Zee*, in *Holland*; a Gentleman well ſkilled in Botany, and has a fine Garden ſtored with rare Plants, of which he is very communicative to his Friends, as I have many Years experienced.

The *Characters* are,

The Empalement of the Flower is ſhort, of one Leaf, and cut into five narrow Segments at the Top. It hath a double Series of narrow Petals, which ſpread open, and turn inward at their Extremity. Under the Receptacle is an oval Germen, having no Style, but five Stigma reſting upon it, and ſurrounded by many ſhort Stamina, crowned by obtuſe Summits. The Germen becomes a roundiſh Fruit, compreſſed at both Ends, with Cells, containing oblong Seeds.

We have but one Species of this Genus at preſent in *England*, which is BASTERIA *foliis ovatis oppoſitis, floribus lateralibus caule fruticoſo ramoſo*. *Baſteria* with oval Leaves placed oppoſite, Flowers coming from the Side of the Stalks, and a branching ſhrubby Stalk. This is the *Frutex Corni, cortice Aromatico. Cateſby, Hiſt. Carol.* Vol. I. p. 46, commonly called in *Carolina* All-ſpice.

This Shrub grows naturally in *America*; Mr. *Cateſby* procured it from the Continent, ſome hundred Miles on the Back of *Charles Town*, in *Carolina*.

It ſeldom riſes more than 4 Feet high in this Country, dividing into many ſlender Branches near the Ground, which are garniſhed with two oval Leaves, placed oppoſite at every Joint, which are entire; theſe have ſhort Foot Stalks; the Flowers grow ſingle at the Extremity of the Foot Stalk, which comes out from the Wings of the Leaves; they have two Series of narrow thick Petals, which ſpread open, and turn inward at the Top, like thoſe of the Starry Anemone, or the Virgin's Bower: Theſe are of a ſullen purple Colour, and have a diſagreeable Scent; they appear in *May*; the Embryo ſits beneath the Flower, and ſupports 5 Stigma; this afterward appears to have 5 Cells, but it never comes to Perfection in this Country, therefore I can only give a Deſcription of it, from an imperfect Rudiment, which the laſt Seaſon, was fairer than any I had before ſeen. The Bark of this Shrub is brown, and has a very ſtrong aromatick Scent; from whence the Inhabitants of *Carolina* gave it the Title of All-ſpice, by which it is generally known in the Nurſeries near *London*.

This Shrub will thrive in the open Air in *England*, if planted in a warm Situation, and a dry Soil: It is propagated by laying down the young Branches, which take root in one Year, and may then be taken off, and planted where they are deſigned to remain, for they do not bear tranſplanting well, after they are grown to any Size. When the Layers are tranſplanted, the Surface of the Ground ſhould be covered with Mulch, to prevent the drying Winds from penetrating the Ground to their Roots; and if the Seaſon prove dry, they muſt be watered once a Week; but ſhould not have too much Wet, for that will rot their tender Fibres.

The beſt Time for laying down the Branches is in Autumn, but they ſhould not be tranſplanted till the Spring 12 Months after; for the Spring is the ſafeſt Time to remove theſe Plants. After the Branches are laid down, there ſhould be ſome old Tanners Bark laid upon the Surface of the Ground, which ſhould alſo be done every Winter, while the Plants are young, to prevent the Froſt deſtroying them.

This Plant was very ſcarce in *England*, till within a Year or two paſt, tha many of them have been brought from *Carolina*, where they have been greatly increaſed in the Gardens near *Charles Town*.

BAUHINIA, Mountain Ebony, *vulgo*. This Plant was ſo named by Father *Plumier*, in Honour of the two famous Botaniſts, *John* and *Caſper Bauhin*.

The *Characters* are,

The Empalement of the Flower is permanent, of one Leaf, tubulous, and cut into five Parts at the Top; the Flower is compoſed of five Petals, which in ſome Species are Spear-ſhaped, waved and reflexed, but in others roundiſh and concave: It hath ten Stamina, of unequal Lengths, ſome of theſe are crowned by oval Summits, but others have none: The oblong Germen ſits upon the Foot Stalk, ſupporting a ſlender declining Style, which turns upward at the Point, crowned by an obtuſe Stigma; the Germen becomes a long taper Pod, incloſing a Row of roundiſh compreſſed Seeds.

The *Species* are,

1. BAUHINIA *foliolis obliquis emarginatis caule aculeato, floribus ſpicatis terminalibus*. *Bauhinia* with oblique Leaves indented at the Top, a prickly Stalk, terminated by Spikes of Flowers.

2. BAUHINIA *caule inermi foliis cordatis lobis acutis glabris, floribus ſpicatis terminalibus*. *Bauhinia* with a ſmooth Stalk, Heart-ſhaped ſmooth Leaves with pointed Lobes, and Spikes of yellow Flowers terminating the Branches.

3. BAUHINIA *foliis ovatis lobis acuminatis ſemi-ovatis. Lin. Sp. Plant.* 375. *Bauhinia* with oval Leaves, and pointed Lobes which are half oval.

4. BAUHINIA *foliis oblongo-cordatis, lobis acuminatis parallelis trinerviis, ſiliquis planis*. *Bauhinia* with oblong Heart-ſhaped Leaves, with pointed parallel Lobes, having three Ribs, and plain flat Pods. *Bauhinia* without Thorns, a narrow bicorned Leaf, and whitiſh Flowers.

5. BAUHINIA *caule aculeato, foliis cordatis lobis orbiculatis, ſubtus tomentoſis*. *Bauhinia* with a prickly Stalk, and Heart ſhaped Leaves with round Lobes, which are woolly on their under Side. Prickly *Bauhinia* with a round indented Leaf, and a large white Flower.

6. Bauhinia *foliis cordatis lobis ſemi orbiculatis, floribus paniculatis axillaribus.* *Bauhinia* with Heart-ſhaped Leaves, having roundiſh Lobes, and Flowers growing in looſe Spikes from the Side of the Branches. This is the *Bauhinia* without Thorns, with white Flowers.

7. Bauhinia *foliis ſubcordatis bipartitis rotundatis caule aculeato, floribus ſparſis.* *Bauhinia* with Heart-ſhaped bifid rounded Leaves, a prickly Stalk, and Flowers growing at a Diſtance. Prickly *Bauhinia* with roundiſh Leaves having two Lobes, and a large white Flower.

8. Bauhinia *foliis cordatis lobis coadunatis obtuſis.* *Bauhinia* with Heart-ſhaped Leaves, and obtuſe Lobes which join together. *Chovannu-mandaru. Hort. Mal.*

9. Bauhinia *caule cirrhifero. Lin. Sp. Plant.* 374. *Bauhinia* with a Stalk having Tendrils.

10. Bauhinia *foliis ovatis lobis divaricatis. Lin. Sp. Plant.* 374. *Bauhinia* with oval Leaves, whoſe Lobes ſpread different Ways.

The 1ſt Sort grows plentifully in *Jamaica*, and other Sugar Iſlands in *America*, where it riſes to the Height of 16 or 18 Feet, with a crooked Stem, dividing into many irregular Branches, armed with ſhort ſtrong Spines, and garniſhed with compound winged Leaves, each having 2 or 3 Pair of Lobes, ending with an odd one, which are oblique, blunt, and indented at the Top. The Stalks are terminated by ſeveral long Spikes of yellow Flowers, ſucceeded by Pods, about 3 Inches long, which have Borders, and contain 2 or 3 ſwelling Seeds. Theſe Pods are glutinous, and have a ſtrong balſamick Scent, as alſo the Leaves when bruiſed. It is called in *America*, the *Indian* Savin Tree, from its ſtrong Odour, reſembling the common Savin.

The 2d Sort was ſent me from *Campeachy* in 1730, by the late Dr. *Houſtoun*, where he found it growing naturally. This riſes 12 or 14 Feet high, with a ſmooth Stem, dividing into many Branches, garniſhed with Heart-ſhaped Leaves, having 2 ſmooth pointed Lobes; the Extremity of every Branch is terminated by a long Spike of yellow Flowers, ſo that when theſe Trees are in flower, they make a fine Appearance. The Pods are ſwelling, and about 5 Inches long, each containing 5 or 6 roundiſh compreſſed Seeds.

The 3d Sort grows naturally in both *Indies*, where it riſes with ſeveral pretty ſtrong, upright, ſmooth Stems, which ſend out many ſlender Branches on every Side, garniſhed with oval Leaves, deeply divided into 2 oval Lobes. The Leaves come out without Order, and have long Foot Stalks, but are much thinner than thoſe of the 2d Sort. The Flowers come out at the Extremity of the Branches, 3 or 4 in a looſe Bunch; the Petals are red, or ſtriped with white, others are plain upon the ſame Branch; the Stamina and Style are white, and ſtand out beyond the Petals. Theſe Flowers are ſucceeded by long flat Pods of a dark brown Colour, each containing 5 or 6 roundiſh compreſſed Seeds. The Wood is very hard, and veined with black, from whence the Inhabitants of *America* call it Mountain Ebony.

The 4th Sort grows naturally at *Campeachy*, from whence I received the Seeds. This riſes to the Height of 20 Feet, with a ſmooth Stem, which divides into many ſmall Branches, which are garniſhed with oblong Heart-ſhaped Leaves, having 2 pointed parallel Lobes, which have each 3 longitudinal Veins. The Leaves are placed alternately on the Branches, which are terminated by looſe Bunches of white Flowers; theſe are ſucceeded by very long narrow compreſſed Pods, with 8 or 10 compreſſed roundiſh Seeds in each.

The 5th Sort was ſent me from *Carthagena*, in *New Spain*, where it grows in Plenty. This ſeldom riſes more than 10 Feet high, dividing into many irregular Branches, armed with ſhort crooked Spines; the Leaves grow alternate, are Heart-ſhaped, and have 2 roundiſh Lobes; they are woolly on their under Side, and have ſhort Foot Stalks. The Flowers grow at the Extremity of the Branches, 2 or 3 together; theſe are large, of a dirty white Colour, and ſucceeded by ſhort flat Pods, each containing 2 or 3 Seeds.

The 6th Sort grows naturally at *La Vera Cruz*, from whence it was ſent me by the late Dr. *Houſtoun*. This riſes 25, or 30 Feet high with many irregular Stems, which divide into many ſlender Branches; theſe are garniſhed with Heart-ſhaped Leaves, having 2 roundiſh Lobes. The Flowers come out in looſe Spikes at every Joint from the Wings of the Leaves, with naked Foot Stalks, and are of a dirty white Colour. Theſe are ſucceeded by oblong compreſſed Pods, broadeſt at their Extremity, where they are rounded, each containing 3 or 4 compreſſed Seeds.

The 7th Sort grows naturally at *Carthagena*, where it was diſcovered by the late Dr. *Houſtoun*, who ſent the Seeds to *England*. This riſes 20 Feet high, with a ſtrong upright Stem, which ſends out many Branches toward the Top; theſe have Spines growing by Pairs, which are ſhort, ſtrong, and crooked. The Leaves grow alternately, and are Heart-ſhaped, with two rounded Lobes. The Flowers are large and white, coming out thinly at the Ends of the Branches. The Petals of theſe are near 2 Inches long, and ſpread open wide; the Stamina and Style are nearly of the ſame Length. The Flowers are ſucceeded by long flat Pods, which are narrow, each containing 5 or 6 Seeds.

The 8th Sort grows naturally in both *Indies*; I received the Seeds of it from *Carthagena*. This riſes with a ſtrong Stem, upward of 20 Feet high, dividing into many ſtrong Branches, garniſhed with Heart-ſhaped Leaves, having obtuſe Lobes which cloſe together. The Flowers grow in looſe Panicles at the Extremity of the Branches, which are large, and of a purpliſh red Colour, marked with white, and have a yellow Bottom. Theſe have a very agreeable Scent. The Flowers are ſucceeded by compreſſed Pods, about 6 Inches long, and 3 Quarters of an Inch broad, containing 3 or 4 compreſſed Seeds in each.

The 9th Sort grows naturally in both *Indies*, where it riſes with many ſlender Stalks, which put out Tendrils, and faſtening themſelves to the neighbouring Trees, riſe to a great Height; the Leaves come out alternately, and are Heart-ſhaped, ſtanding upon long Foot Stalks; theſe are 6 Inches long, and 3 Inches and a half broad in the Middle, and deeply cut into 2 pointed Lobes, each having 3 prominent Ribs running longitudinally. This hath not produced Flowers in *England*, nor had I any Account of them with the Seeds, which were ſent me from *Campeachy*.

The 10th Sort grows naturally in great Plenty on the north Side of the Iſland of *Jamaica*, from whence the Seeds were ſent me by *William Williams*, Eſq; of St.

Ann's,

Ann's, by the Title of Upright Honeyſuckle. This is a low Shrub, ſeldom riſing more than 5 or 6 Feet high, dividing into ſeveral Branches, garniſhed with oval Leaves, divided into 2 Lobes, which ſpread from each other. The Flowers grow in looſe Panicles at the End of the Branches, which are white, and have a very agreeable Scent. Theſe appear the greateſt Part of Summer, ſo is one of the great Beauties of the hot Houſe. The Flowers are ſucceeded by taper Pods, about 4 Inches long, each containing 4 or 5 roundiſh compreſſed Seeds, of a dark Colour.

All theſe Plants being Natives of warm Countries, will not thrive in *England*, unleſs kept in a warm Stove: They are propagated by Seeds, procured from the Countries where they grow naturally, for they do not perfect them in *England*.

The laſt Sort has ſeveral Times produced Pods in the *Chelſea* Garden, but they have never come to Maturity. The Seeds ſhould be brought over in their Pods, which will preſerve them good. Theſe muſt be ſown in Pots filled with light freſh Earth, and plunged into a moderate hot Bed of Tanners Bark; if the Seeds are good, the Plants will come up in about 6 Weeks, and in a Month after, will be fit to tranſplant, when they ſhould be carefully ſhaken out of the Seed Pot, ſo as not to tear off the Roots, and planted each in a ſmall Pot filled with light loamy Earth, and plunged into the hot Bed again, being careful to ſhade them until they have taken freſh Root, after which they ſhould have freſh Air admitted to them every Day in warm Weather. In Autumn they muſt be placed in the Bark Stove, and treated as other tender Exoticks, giving them but little Water in Winter. As theſe Plants frequently flower, ſo they are worthy of a Place in the Stove.

BAY. *See* Laurus.

BEANS. *See* Faba.

KIDNEY or FRENCH-BEANS. *See* Phaſeolus.

BEAN-TREFOIL. *See* Cytiſus.

BEAR'S EAR. *See* Auricula.

BEAR's-EAR SANICLE. *See* Verbaſcum.

BEAR's-FOOT. *See* Helleborus.

BECABUNGA, or Brook-lime.

This is a Sort of *Veronica*, or Water Speedwel; of which there are 2 Sorts, one with a long Leaf, and the other round; they are both very common in Ditches, and watery Places, almoſt every-where in *England*; the 2d Sort is uſed in Medicine.

BEE, or GNAT-FLOWER. *See* Orchis.

BEECH-TREE. *See* Fagus.

BELL-FLOWER. *See* Campanula.

BELLADONNA. *See* Atropa and Amaryllis.

BELLIS. The Daiſy.

The *Characters* are,

It hath a radiated diſcous Flower, compoſed of many hermaphrodite Flowers in the Diſk, and female Flowers forming the Border, or Rays; theſe are included in a common Empalement, with a double Series of ſmall Leaves of equal Length. The hermaphrodite Flowers in the Diſk, are Funnel-ſhaped, and cut into 5 Parts at the Brim; the female Flowers are Tongue-ſhaped, and make the Border; theſe have no Stamina, but an oval Germen ſupporting a ſlender Style, crowned by 2 ſpreading Stigma; the hermaphrodite Flowers have an oval Germen, ſupporting a ſimple Style, crowned by a bordered Stigma, attended by five ſhort Stamina, crowned by tubular cylindrical Summits. The Germen becomes a ſingle naked Seed placed vertically.

The *Species* are,

1. BELLIS *ſcapo nudo unifloro. Hort. Cliff.* 418. Daiſy with a naked Stalk, having one Flower. This is the *Bellis Sylveſtris minor. C. B. P.* 267. Smaller wild Daiſy.

2. BELLIS *caule ſubfolioſo. Lin. Sp. Plant.* 887. Daiſy with Leaves on the lower Part of the Stalk. This is the ſmaller Meadow Daiſy with a leafy Stalk.

3. BELLIS *hortenſis flore pleno majore. C. B. P.* 261. Garden Daiſy with a larger double Flower.

The 1ſt Sort is the common Daiſy, which grows naturally in Paſture Land in moſt Parts of *Europe*, and is often a troubleſome Weed in the Graſs of Gardens.

The 2d Sort is a low annual Plant, which grows naturally on the *Alps*, and hilly Parts of *Italy*. This ſeldom riſes more than 3 Inches high, with an upright Stalk, garniſhed with Leaves on the lower Part, but the upper Part is naked, ſupporting a ſingle Flower like that of the common Daiſy, but ſmaller. This is preſerved in ſome Botanick Gardens for Variety; it was ſent me from *Verona*, where it grows wild.

The Garden Daiſy is generally ſuppoſed to be only a Variety of the wild Sort, which was firſt obtained by Culture. This may probably be true, but there has not been any Inſtance of late Years of the wild Sort, having been altered by Culture; for I have kept the wild Sort in the Garden upward of 30 Years, and have conſtantly parted the Roots, and raiſed many Plants from Seeds, but they have conſtantly remained the ſame; nor have I ever obſerved the Garden Daiſy to degenerate to the wild Sort, where they have been ſome Years neglected, though they have altered greatly with regard to the Size and Beauty of their Flowers. I have alſo obſerved the ſeveral Varieties of the Garden Daiſy vary from one to the other, therefore I ſhall not conſider them as diſtinct Species, but ſhall only mention the Varieties, which are cultivated in the Gardens.

1. The Red and White Garden Daiſy, with double Flowers.
2. The double variegated Garden Daiſy.
3. The Childing, or Hen and Chicken Daiſy.
4. The Cockſcomb Daiſy with red and white Flowers.

The Garden Daiſies flower in *April* and *May*, and make a pretty Variety, intermixed with Plants of the ſame Growth; they ſhould be planted in a ſhady Border, and a loamy Soil without Dung, in which they may be preſerved without varying, provided the Roots are tranſplanted and parted every Autumn; which is all the Culture they require, except the keeping them clear from Weeds.

Theſe were formerly planted for Edgings to Borders, but are very unfit for this Purpoſe; becauſe where fully expoſed to the Sun, they frequently die in large Patches, whereby the Edgings become bald in many Places.

BELLIS MAJOR. *See* Chryſanthemum.

BELLONIA. This Plant was ſo named by Father *Plumier*, in Honour of the famous *Petrus Bellonius*, who has left many valuable Tracts on Natural Hiſtory, *&c.*

The *Characters* are,

The Flower hath a permanent Empalement of one Leaf, cut into five Parts at the Top; the Flower is Wheel-ſhaped, *of one Leaf, with a ſhort Tube, but ſpread open above, and cut into five obtuſe Segments. It hath five ſhort, Awl-ſhaped Stamina, crowned by ſhort erect Summits, which cloſe together. The Germen is ſituated under the Receptacle of the Flower, ſupporting an Awl-ſhaped Style, which is longer than the Stamina, and crowned by an acute Stigma. The Germen becomes an oval turbinated Seed Veſſel, ending in a Point, having one Cell filled with ſmall round Seeds.*

We have but one *Species* of this Plant, *viz.*

BELLONIA *Lin. Sp. Plant.* 172. This is the *Bellonia fruteſcens, folio meliſſæ aſpero. Plum. Nov. Gen.* 19. Shrubby *Bellonia* with a rough Balm Leaf.

This Plant is very common in the warm Iſlands of *America*, from whence I have received the Seeds; which were collected by the late Dr. *William Houſtoun*.

This hath a woody Stem, which riſes 10 or 12 Feet high, ſending out many lateral Branches, which are garniſhed with oval rough Leaves placed oppoſite; the Flowers come out from the Wings of the Leaves, in looſe Panicles, of the Wheel Shape, of one Leaf, divided into five Parts; theſe are ſucceeded by oval Capſules, ending in a Point, full of ſmall round Seeds.

It is propagated by Seeds, which ſhould be ſown early in the Spring, in a Pot filled with light freſh Earth, and plunged into a hot Bed of Tanners Bark, obſerving to water it frequently, as the Earth appears dry; but you muſt be careful not to waſh the Seeds out of the Ground. When the Plants are half an Inch high, they ſhould be carefully tranſplanted into Pots filled with light freſh Earth, and plunged into the hot Bed again, obſerving to water and ſhade them until they have taken Root; after which Time they ſhould have Air admitted to them every Day, when the Weather is warm, and muſt be frequently watered. When the Plants have filled theſe Pots with their Roots, they ſhould be carefully ſhaken out of them, and their Roots trimmed, and put into larger Pots filled with light freſh Earth, and plunged into the hot Bed again. In warm Weather they ſhould have free Air admitted to them every Day; but in Autumn they muſt be plunged into the Bark Stove, and treated in the ſame Manner as other tender Exoticks. The ſecond Year theſe Plants will ſometimes flower; but they rarely produce good Seeds in this Climate; however, they may be propagated by Cuttings in the Summer Months, provided they are planted in light Earth on a moderate hot Bed, and carefully watered and ſhaded untill they have taken Root. Theſe Plants muſt be conſtantly kept in the Stove, and ſhould have a large Share of free Air in warm Weather; but if they are ſet abroad, they will not thrive in this Climate.

BELVEDERE. *See* Chenopodium.

BENZOIN, The Benjamin Tree. *See* Laurus.

BERBERIS, The Barberry, or Pipperidge Buſh.

The *Characters* are,

The Flower hath a coloured Empalement, which ſpreads open, compoſed of ſix concave Leaves, three of which are alternately larger than the other; the Flower is of ſix Leaves, which are roundiſh, concave, and little larger than the Empalement; there are two coloured Nectariums, faſtened to the Baſe of each Petal, and ſix obtuſe compreſſed erect Stamina, with two Summits faſtened on each Side their Apex. The Germen is cylindrical, and the Length of the Stamina, having no Style, but crowned by an orbicular Stigma broader then the Germen, having a ſharp Border: The Germen becomes an obtuſe cylindrical umbilicated Berry, having a Puncture, and one Cell, incloſing two cylindrical Seeds.

The *Species* are,

1. BERBERIS *pedunculis racemoſis. Mat. Med.* 290. Barberry with branching Foot Stalks. This is the *Berberis dumetorum. C. B. P.* 454. The Common Barberry.

2. BERBERIS *foliis obverſè-ovatis.* Barberry with oval obverſe Leaves. This is the *Berberis latiſſimo folio Canadenſis. H. R. Par.* Broad leaved *Canada* Barberry.

3. BERBERIS *pedunculis unifloris. L.* Barberry with a ſingle Flower on each Foot Stalk. This is the *Berberis Cretica buxi folio. Tourn.* Box-leaved Barberry of *Crete*.

The 1ſt Sort grows naturally in the Hedges in many Parts of *England*, but is cultivated in Gardens for its Fruit, which is pickled, and uſed for garniſhing Diſhes. This Shrub riſes with many Stalks from the Root, to the Height of 8 or 10 Feet, which have a white Bark, yellow on the Inſide; the Stalks and Branches are armed with ſharp Thorns, which commonly grow by threes; the Leaves are oval, obtuſe, and ſlightly ſawed on their Edges. The Flowers come out from the Wings of the Leaves, in ſmall Bunches, like thoſe of the Currant Buſh, and are yellow; theſe are ſucceeded by oval Fruit, which are firſt green, but when ripe turn to a fine red Colour. The Flowers appear in *May*, and the Fruit ripens in *September*.

There are 2 or 3 Varieties of this Shrub, which have been mentioned as diſtinct Species; one is the *Berberis ſine nucleo. C. B. P.* Barberry without Stone. The 2d is *Berberis fructu albo.* Barberry with white Fruit. The 3d is the *Berberis orientalis procerior fructu nigro ſuaviſſimo. Tourn. Cor.* Taller Eaſtern Barberry with a black ſweet Fruit. The firſt of theſe is certainly accidental, becauſe the Suckers taken from thoſe Buſhes being tranſplanted, commonly produce Fruit with Stones; ſo it is the Age of the Plant which occaſions that Variation. The Sort with white Fruit ſeldom bears; the Leaves of this are of a lighter green Colour, and the Bark of the Stalks are whiter than thoſe of the common, which are the only Differences between them; for the Fruit is ſeldom produced here. The 3d Sort appears the ſame with the common; and only differs in the Colour and Flavour of the Fruit, ſo is only a Variety.

The common Sort is generally propagated by Suckers, which the Roots put out in great Plenty; but theſe Plants are very ſubject to ſend out Suckers in greater Plenty than thoſe which are propagated by Layers; therefore the latter Method ſhould be preferred. The beſt Time for laying down the Branches, is in Autumn, when their Leaves begin to fall; the young Shoots of the ſame Year are the beſt for this Purpoſe; theſe will be well rooted by the next Autumn, when they may be taken off, and planted where they are deſigned to remain. Where this Plant is cultivated for Fruit, it ſhould be planted ſingle, (not in Hedges, as was the old Practice) and the Suckers every Autumn taken away, and all the groſs Shoots pruned out. By this Method the Fruit will be fairer, and in great Plenty. A few of theſe Shrubs may be allowed to have a Place in Wilderneſſes, or Plantations of Shrubs, where they make a pretty Variety; but they ſhould not be planted in great Quantities, near Walks much frequented, becauſe their Flowers emit a very ſtrong diſagreeable Odour.

The *Canada* Sort was more common ſome Years paſt, than at preſent. The Leaves are much broader, and ſhorter than thoſe of the common Sort, and the Fruit is black when ripe. This may be propagated in the ſame way as the common Sort, and is equally hardy.

The Box-leaved Sort is at preſent very rare in *England*; and while young, the Plants are ſomewhat tender, ſo have been killed by ſevere Froſt. This never riſes more than 3 or 4 Feet high in *England*, but ſends out many Stalks from the Root, which are ſtrongly armed with Spines at every Joint; the Leaves are produced without Order, and are ſhaped like thoſe of the narrow leaved Box Tree; the Flowers come out from between the Leaves, each upon a ſlender Foot Stalk; but theſe are not ſucceeded by Fruit in *England*.

This Sort may be propagated by laying down the Branches as the firſt; but when the young Plants are taken off, they ſhould be planted in Pots, and ſheltered under a Frame in Winter, till they have obtained Strength, when they may be planted in a warm Situation.

BERMUDIANA. *See* Siſyrinchium.

BERNARDIA. *See* Croton.

BESLERIA. This Plant was named after *Baſilius Beſler*, an Apothecary at *Nuremberg*, who was the Author of a Book, entitled *Hortus Eyſtetenſis*.

The *Characters* are,

The Flower is of the Lip Kind, with an Empalement of one Leaf, which is erect, and cut into five acute Parts at the Brim: The Flower is of one Leaf, and quinquefid, the Segments being roundiſh, the lower being large, and the two upper leſs divided; it hath four Stamina in the Tube of the Flower, two of which are longer than the other, and crowned by ſmall Summits: The oval Germen ſupports an Awl-ſhaped Style, crowned by an acute Stigma; this becomes an oval Berry, with one Cell filled with ſmall Seeds.

The *Species* are,

1. BESLERIA *pedunculis ramoſis, foliis ovatis. Lin. Sp. Plant.* 619. *Beſleria* with branching Foot Stalks, and oval Leaves. This is the *Beſleria Meliſæ Tragi folio. Plum. Beſleria* with a Leaf of *Tragus*'s Balm.

2. BESLERIA *pedunculis ſimplicibus confertis, foliis lanceolatis. Lin. Sp. Plant. Beſleria* with ſimple Foot Stalks, growing in Cluſters, and Spear-ſhaped Leaves. *Beſleria* with Golden Rod Leaves, and a ſmaller yellow Flower.

3. BESLERIA *pedunculis ſimplicibus ſolitariis, involucris pentaphyllis. Lin. Sp. Plant.* 619. *Beſleria* with ſimple Stalks growing ſingle, and a five leaved Involucrum. Climbing creſted *Beſleria* with a black Fruit.

The 1ſt Sort hath a ſmooth woody jointed Stalk; at each Joint are placed two oval nervous Leaves oppoſite, which are crenated on their Edges; the Flowers come out from the Wings of the Leaves, on ſhort branching Foot Stalks, each ſuſtaining 6 or 8 Flowers, which ſtand each upon a ſeparate ſmaller Foot Stalk. Theſe are of one Leaf, of an anomalous Figure, and quinquefid; after the Flower is paſt, the Germen becomes an oval ſoft Berry, with one Cell filled with ſmall Seeds.

The 2d Sort riſes with a ligneous Stem, 6 or 7 Feet high, dividing toward the Top into many irregular Branches, garniſhed with Spear-ſhaped Leaves, having many tranſverſe Veins, ſawed on their Edges; the Flowers come out at the Wings of the Leaves, in large Cluſters, each having a ſeparate Foot Stalk: Theſe are ſmall, tubulous, of a pale yellow Colour, ſucceeded by round ſoft Berries, incloſing many ſmall Seeds.

The 3d Sort hath a creeping Stalk, which ſends out Roots at every Joint; theſe are garniſhed with oval Leaves placed oppoſite, which have many tranſverſe Ribs, and are ſharply ſawed on their Edges; from the Wings of the Leaves come out the Foot Stalks of the Flowers ſingle, each ſuſtaining one tubulous irregular hairy Flower, divided at the Top into 5 obtuſe Parts, with a large five leaved Involucrum, deeply ſawed on the Border: After the Flower is paſt, the Germen becomes a hairy Placenta, in the Center of the Empalement, containing many ſmall Seeds.

Theſe Plants grow naturally in the warm Parts of *America*, from whence the Seeds have been brought to *Europe*, and cultivated in ſome curious Botanic Gardens.

Theſe Seeds ſhould be ſown on a hot Bed early in the Spring; and when the Plants are come up half an Inch high, they ſhould be each tranſplanted into a ſmall Pot filled with light freſh Earth, and plunged into a hot Bed of Tanners Bark, obſerving to water and ſhade them until they have taken Root; after which Time they ſhould have Air and Water in Proportion to the Warmth of the Seaſon, and the Heat of the Bed in which they are placed. When the Plants have filled theſe ſmall Pots with their Roots, they ſhould be ſhaken out, and their Roots trimmed, and then put into larger Pots filled with light freſh Earth, and plunged into the hot Bed again; where they ſhould have a large Share of freſh Air in warm Weather, and muſt be frequently watered. With this Management they will thrive very well in Summer, but in Winter they muſt be removed into the Stove, where they muſt be placed in a temperate Warmth, and ſhould be often, but ſparingly, watered. The 2d Year theſe Plants will flower, and ſometimes they will perfect their Seeds in this Country; but they muſt be conſtantly preſerved in the Stove; for they will not live in the open Air.

BETA, the Beet.

The *Characters* are,

The Flower hath a five leaved concave permanent Empalement. It hath no Petal, but five Awl-ſhaped Stamina, placed oppoſite to the Leaves of the Empalement, crowned by roundiſh Summits; the Germen is ſituated below the Receptacle, ſupporting two ſhort erect Styles, crowned by pointed Stigma; the Germen becomes a Capſule with one Cell, having a ſingle Seed, wraped up in the Empalement.

The *Species* are,

1. BETA *caulibus decumbentibus, foliis triangularibus petiolatis.* Beet with declining Stalks, and triangular Leaves having Foot Stalks. Wild maritime Beet.

2. BETA *foliis radicalibus petiolatis, caulinis ſeſſilibus, ſpicis lateralibus longiſſimis.* Beet with the lower Leaves having Foot Stalks, thoſe upon the Stalks without, and very long Spikes of Flowers proceeding from the Sides of the Branches. This is the *Beta Alba, C. B. P.* 118. Common White Beet, or *Cicla* of the Shops.

3. BETA *foliis latiſſimis, radice pyramidato carnoſo.* Broadeſt leaved Beet, with a pyramidal fleſhy Root. The *Beta Rubra, C. B. P.* 118. Red Beet with a Turnep Root.

There are ſeveral Varieties of this Genus, ſome of which are cultivated for the Kitchen; but as theſe have been improved by Culture, ſo they muſt not be deemed diſtinct Species. There are ſome who have ſuppoſed all the Species were only ſeminal Variations, but after more than forty Years Cultivation, I could never obſerve, that either of the three Species here enumerated have altered from one to the other. The only Alteration which I have obſerved in the third Species, has been in the Colour of the Leaves and Roots, which will be hereafter mentioned.

The 1ſt Sort grows naturally on the Banks of the Sea, and in Salt Marſhes in divers Parts of *England*. This is ſuppoſed to be the ſame with the 2d Species; but I have brought the Seeds from the Places where they grow naturally, many Times, and have cultivated the Plants with Care, but could not find any of them vary from their Parent Plants in their Characters, ſo that I can make no doubt of its being a diſtinct Species.

The 2d Sort is cultivated in Gardens for its Leaves, which are uſed in Soups; the Root of this Sort ſeldom grows larger than a Man's Thumb; the Stalks grow erect, and are garniſhed with oblong Spear-ſhaped Leaves, growing cloſe to the Stalk; the Spikes of Flowers come out from the Wings of the Leaves, which are long, and have narrow Leaves placed between the Flowers. The lower Leaves of the Plant are thick and ſucculent, and their Foot Stalks broad. The Varieties of this are, the White Beet, the Green Beet, and the *Swiſs* or Chard Beet. Theſe will vary from one to the other by Culture, as I have often experienced, but never alter to the 1ſt or 3d Sort.

The 3d Sort hath large thick ſucculent Leaves, for the moſt part of a dark red, or purple Colour. The Roots are large, and of a deep red Colour; the larger theſe Roots grow, the tenderer they will be; and the deeper their Colour, the more they are eſteemed. The Varieties of this are, the common Red Beet, the Turnep-rooted Red Beet, the green-leaved Red Beet, and the Yellow-rooted Beet.

The 2d Sort, which is cultivated for its Leaves, is commonly ſown by itſelf, and not mixed with other Crops. This is ſown the Begining of *March*, upon an open Spot of Ground, not too moiſt; the Seeds ſhould be ſown thinly, becauſe the Plants require Room to ſpread; for when they are too cloſe, the Leaves will be ſmall and full of Fibres, ſo unfit for the Purpoſes deſigned. When the Plants have put out four Leaves, the Ground ſhould be hoed, as is practiſed for Carrots, carefully cutting up all the Weeds, and alſo the Plants where they are too near each other, leaving them at leaſt four Inches aſunder: If this is performed in dry Weather, all the Weeds will be deſtroyed; but as young Weeds will ſoon appear, in 3 Weeks or a Month's Time, the Ground ſhould be a 2d Time hoed over, to clean it, and thin the Plants to a greater Diſtance; for by this Time they will be paſt Danger, ſo ſhould not be left nearer than ſix Inches, if Regard is had to the Goodneſs of their Leaves: And if it is of the *Swiſs* Kind, with broad Leaves, the Plants muſt not be nearer than nine or ten Inches. If the ſecond hoeing is well performed, and in dry Weather, the Ground will be clean a Month longer, when it ſhould be hoed over a 3d Time; which, if properly done, will deſtroy all the Weeds; ſo that after this, the Plants will ſpread and prevent the Weeds from growing, therefore will want but little cleaning for a conſiderable Time, and the Leaves will ſoon be fit for Uſe, when the outer large ones ſhould be firſt gathered, leaving the ſmall inner Leaves to grow larger; ſo that a ſmall Spot of Ground will ſupply a moderate Family, and will furniſh a new Supply of Leaves for two Years, provided the Plants are not permitted to run up to Seed, for after that their Leaves will not be good: Therefore thoſe who are curious in theſe Herbs, muſt ſow a freſh Spot of Ground annually, becauſe theſe Plants naturally run up the 2d Year; and although the Roots may be continued longer, by cuting off the Stalks when they begin to ſhoot, yet the Leaves will not be ſo large or tender on theſe Roots, as on the young Plants.

The Red Beet is frequently ſown with Carrots, Parſneps, or Onions, by the Kitchen Gardeners near *London*, who draw up their Carrots or Onions when young, to give the Beets Room to grow, when they are gathered; but where theſe Crops are not timely removed from them, it will be a better Method to ſow the Beets ſeparately. This Sort requires a deep light Soil, for their Roots run deep in the Ground, and in ſhallow Ground, they will be ſhort and ſtringy. The Seeds ſhould be ſown in *March*, and treated as the former Sort; but the Plants ſhould not be left nearer than a Foot Diſtance, or in good Land a Foot and a Half, for the Leaves will cover the Ground at that Diſtance. The Roots will be fit for Uſe in Autumn, and continue good all the Winter; but in Spring, when they begin to ſhoot, they will be hard and ſtringy. A few Roots may be left for Seed, or ſome of the faireſt Roots tranſplanted to a ſheltered ſpot, where they may be defended from ſtrong Winds, which break down their Stalks if not well ſupported, eſpecially when the Seeds are formed, which becoming heavy as they increaſe in Bulk, are apt to weigh down the ſlender Stalks upon which they grow. The Seed will ripen in *September*, when the Stalks ſhould be cut off, and ſpread on Mats to dry, and afterward threſhed out, cleaned, and put up in Bags for Uſe.

BETONICA, Betony.

The *Characters* are,

The Flower hath a permanent Empalement of one Leaf, which is tubulous, and cut at the Brim into five Parts. The Flower is of one Leaf, of the Lip Kind, with a cylindrical incurved Tube; the upper Lip is roundiſh, plain, erect, and entire; the lower Lip is cut into three Parts, the middle Segment being broad, roundiſh, and indented at the End. It hath four Awl-ſhaped Stamina, two long and two ſhorter, which incline to the upper Lip; theſe have roundiſh Summits. The Germen is quadripartite, ſupporting a Style of the Length and Figure of the Stamina, crowned by a bifid Stigma. The Germen afterward becomes four naked oval Seeds, lodged in the Empalement.

The *Species* are,

1. Betonica *ſpicâ interruptâ, corollarum laciniâ labii intermediâ emarginatâ. Flor. Leyd. Prod.* 316. Betony with an interrupted Spike, and the middle Segment of the lower Lip of the Flower indented at the End. *Betonica purpurea. C. B. P.* 235. Purple or Wood Betony.

2. Betonica *foliis radicalibus ovato-cordatis, caulinis lanceolatis obtuſis ſpicâ craſſiore.* Betony whoſe under Leaves are Heart-ſhaped, thoſe on the Stalks Spear-ſhaped and obtuſe, and a thicker Spike of Flowers.

Betonica major Danica. Greater *Daniſh* Betony.

3. Betonica *foliis triangularibus obtuſis ſpicâ breviore.* Betony with obtuſe triangular Leaves, and a ſhorter Spike of Flowers. This is the *Betonica minima Alpina Helvetica. Park. Theat.* 650. The leaſt *Alpine* Betony.

4. Betonica *ſpicâ integrâ, corollarum laciniâ labii intermediâ integerrimâ. Flor. Leyd. Prod.* 316. Betony with a whole Spike, and the middle Segment of the lower Lip entire. *Betonica Orientalis. Tourn.* Eaſtern Betony with very long narrow Leaves, and a thicker Spike of Flowers.

5. Betonica *foliis lanceolatis obtuſis incanis ſpicâ florum craſſiori.* Betony with obtuſe Spear-ſhaped hoary Leaves, and a thicker Spike of Flowers. This is the *Betonica Italica incana, flore carneo. Barrel. Icon.* 340. Hoary *Italian* Betony, with a fleſhy Flower.

6. Betonica *verticillata calycibus ſpinoſis. Hort. Upſal.* 165. Betony with Flowers growing in Whorls round the Stalk, and prickly Flower Cups. *Betonica arvenſis annua, flore ex albo flaveſcente. Tourn. Inſt.* 203. Annual Field Betony with a yellowiſh white Flower.

7. Betonica *ſpicâ baſi folioſâ. Lin. Sp. Plant.* 573. Betony with a Spike leafy at the Baſe. *Betonica montana lutea. Barrel. Icon.* 339. Yellow Mountain Betony.

The 1ſt Sort grows naturally in Woods, and on ſhady Banks, in *England,* ſo is ſeldom cultivated in Gardens. This Sort is uſed in Medicine, and greatly eſteemed as a vulnerary Herb. There is a Variety of it with a white Flower, which grows naturally in *Kent.*

The 2d Sort grows naturally in *Denmark.* This differs greatly from our common Sort, the lower Leaves being much broader and Heart-ſhaped; thoſe upon the Stalks are Spear-ſhaped and rounded at the End, and the Stalks are larger, ſtand upright, and are terminated by thicker Spikes of Flowers. Theſe Differences are conſtant, for I have many Years propagated them by Seeds, and have never found the Plants vary.

The 3d Sort grows naturally upon the *Alps,* where it riſes about four Inches high; and when cultivated in a Garden, not above ſeven or eight. The leaves of this are much broader at the Baſe than thoſe of the common Sort, and very different in their Shape, being triangular and blunt at the End. The Flowers grow in very ſhort cloſe Spikes, on the Top of the Stalks. Theſe Differences conſtantly hold in the Plants raiſed from Seeds.

The 4th Sort was diſcovered by Dr. *Tournefort* in the *Levant,* who ſent the Seeds to the Royal Garden at *Paris,* and moſt of the Botanick Gardens in *Europe* have been ſince furniſhed with it. The Leaves are very long, narrow, and hairy, and are neatly crenated on their Edges. The Flowers grow in very cloſe thick Spikes at the Top of the Stalks, which are larger, and of a lighter purple Colour than thoſe of the common Sort.

The 5th Sort grows naturally in *Italy,* upon the Hills, from whence I received the Seeds. The Leaves of this Sort are broader, and not ſo long as thoſe of the common Sort, and are hoary; the Stalks and Spikes of Flowers are ſhorter and much thicker, and the Flowers are larger and of a Fleſh Colour. This Sort conſtantly keeps the ſame from Seeds.

There is another Sort which *Tournefort* and others mention, by the Title of *Betonica rubicundiſſimo flore montis aurei*; which differs but little from the 5th, except in the Colour of the Flower, ſo I doubt of its being ſpecifically different from that.

The 6th Sort is annual, and grows naturally on arable Land in *France, Italy,* and *Germany*; if brought into a Garden, the Seeds will ſcatter, and produce Plenty of the Plants without farther Care.

The other Sorts are perennial Plants, which may be propagated by Seeds, or parting their Roots. They are all very hardy, but require a ſhady Situation and a moiſt ſtiff Soil, in which they will thrive better than in rich Ground. The beſt Time to part and tranſplant the Roots is in Autumn, but the Seeds ſhould be ſown in Spring upon a ſhady Border, and when the Plants come up, they require no Care but to keep them clean from Weeds, and to thin them where they are too cloſe. They all flower in *May* and *June,* and the Seeds ripen in *Auguſt.*

BETONICA AQUATICA. *See* Scrophularia.

BETONICA PAULI. *See* Veronica.

BETULA, the Birch Tree.

The *Characters* are,

It hath male and female Flowers, at ſeparate Diſtances on the ſame Tree; the male Flowers are collected in a cylindrical Kutkin, ſcaly, looſe, and imbricated on every Side, each Scale having three Flowers, which have two minute Scales on the Side. The Flower is compoſed of three equal Florets, fixed to the Empalement by a ſingle Scale; each Floret is of one Leaf, divided into four oval Segments which ſpread open; theſe have four ſmall Stamina, crowned by double Summits. The female Flowers grow in a Katkin, in the ſame Manner as the male. The common Katkin is imbricated, having three Scales which are every Way oppoſite, faſtened to the central String or Axis, having two Heart-ſhaped Flowers pointing toward the Apex, where it is ſinuated. They have no viſible Petals, but a ſhort oval Germen ſupporting two briſtly Styles, the Length of the Scales of the Empalement, and crowned with a plain Stigma. It hath no Pericarpium, but the Seeds are included in the Scales of the Katkin, which are oval and winged.

The *Species* are,

1. Betula *foliis ovatis acuminatis ſerratis. Hort. Cliff.* 442. Birch Tree with oval ſawed Leaves ending in Points. The common Birch Tree.

2. Betula *foliis orbiculatis crenatis. Flor. Lap.* Birch Tree with round crenated Leaves. *Betula pumila foliis ſubrotundis. Amman.* Dwarf Birch with roundiſh Leaves.

3. Betula *foliis cordatis oblongis acuminatis duplicato-ſerratis. Lin. Sp. Plant.* Birch Tree with rhomboid oval pointed Leaves, which are doubly ſawed. *Betula nigra Virginiana. Pluk. Alm.* Black *Virginia* Birch Tree.

The 1ſt is the common Birch Tree, which is ſo well known as to need no Deſcription. This is not much eſteemed for its Wood, but it may be cultivated to Advantage upon barren Land, where better Trees will not thrive; for there is no Ground ſo bad, but this Tree will thrive in: It will grow in moiſt ſpringy Land, or in dry Gravel or Sand, where there is little Surface: On Ground which produced nothing but Moſs, theſe Trees have ſucceeded ſo well, as to be fit to cut in ten Years after planting, and have been ſold for near 10 *l. per* Acre ſtanding, and the after Produce has been conſiderably increaſed. As many of the Woods near *London,* which were chiefly ſtocked with theſe Trees, have been of late

Years grubbed up, the Value of theſe Plantations have advanced in Proportion; therefore thoſe Perſons who are poſſeſſed of ſuch poor Land, cannot employ it better, than by planting theſe Trees, eſpecially as the Expence of doing it is not great.

The beſt method to cultivate this Tree, is to furniſh yourſelf with young Plants from the Woods, where they naturally grow, and are generally found there in great plenty; but in Places where there are no young Plants to be procured near, they may be raiſed from Seeds, which ſhould be carefully gathered in Autumn, as ſoon as the Scales under which they are lodged begin to open, otherwiſe they will ſoon fall out and be loſt: The Seeds are ſmall, ſo ſhould not be buried deep in the Ground. Autumn is the beſt Seaſon to ſow them, and in a ſhady Situation the Plants will thrive better than when they were expoſed to the full Sun; for in all Places where there are any large Trees, their Seeds fall, and the Plants come up well without Care; ſo that if the young Plants are not deſtroyed by Cattle, there is generally plenty of them, in all the Woods where there are any of theſe Trees. Theſe wild Plants ſhould be carefully taken up, ſo as not to deſtroy their Roots. The Ground where they are to be planted, will require no Preparation; all that is neceſſary to be done, is to looſen the Ground with a Spade or Mattock, in the Places where the Plants are to ſtand, making Holes to receive their Roots, covering them again when the Plants are placed, cloſing the Earth hard to their Roots. If the Plants are young, and have not much Top, they will require no pruning; but where they have buſhy Heads, they ſhould be ſhortened to prevent their being ſhaken and diſplaced by the Wind. When the Plants have taken Root, they will require no other Care, but to cut down the great Weeds which would over-hang them; which may be done with a Sickle, being careful not to cut or injure the young Trees. This need not be repeated oftener than twice in a Summer the two firſt Years, after which Time the Plants will be ſtrong enough to keep down the Weeds, or at leaſt be out of Danger from them.

Theſe may be planted any Time from the Middle of *October* till the Middle of *March*, when the Ground is not frozen; but in dry Land Autumn is the beſt Seaſon, and Spring for moiſt. The Diſtance they require is ſix Feet ſquare, that they may ſoon cover the Ground, and by ſtanding cloſe they will draw each other up; for in Situations where they are much expoſed, if not pretty cloſe, they will not thrive ſo well.

If the Plants take kindly, they will be fit to cut in about ten Years; and afterward, every ſeventh or eighth Year, if deſigned for the Broom-makers only; but where they are intended for Hoops, they ſhould not be cut oftener than every twelfth Year.

The Expence of making theſe Plantations, in Places where young Plants can be eaſily procured, will not exceed 40 *s. per* Acre, and the after Expence of cleaning about 20 *s.* ſo that the whole will not be more than 3 *l.* and if the Land ſo planted be of little Value, the Proprietor cannot make better Uſe of his Money; for when the Wood is cut, it will repay the Expence with Intereſt, and a perpetual Stock left upon the Ground. I have ſeen ſeveral of theſe Plantations made upon Land which would not lett for 1 *s. per* Acre, which has produced from 10 to 12 *l.* an Acre, clear of the Expence in Cutting, and this every twelfth Year. The Broom-makers are conſtant Cuſtomers for Birch, in all Places within twenty Miles of *London*, or where it is near Water Carriage, in other Parts the Hoop-benders are the Purchaſers; but the larger Trees are bought by Turners, and the Wood is uſed for making Ox-yokes, and other Inſtruments of Huſbandry.

In the Northern Parts of *Europe*, this Wood is greatly uſed, for making Carriages and Wheels, being hard and of long Duration. In *France* it is generally uſed for making wooden Shoes. It makes very good Fuel.

In ſome Places theſe Trees are tapped in the Spring, and the Sap drawn out to make Birch Wine, which has been recommended for the Stone and Gravel, as is alſo the Sap unfermented. The Bark of the Birch Tree is almoſt incorruptible. In *Sweden* the Houſes are covered with it, where it laſts many Years. It frequently happens, that the Wood is entirely roten, and the Bark perfectly ſound and good.

The 2d Sort grows naturally in the Northern Parts of *Europe*, and upon the *Alps*; this riſes about two or three Feet high, having ſlender Branches, which are garniſhed with round Leaves, but ſeldom produces either male or female Flowers here. It is preſerved in ſome curious Gardens for Variety, but is of no Uſe.

The 3d and 4th Sorts grow naturally in *North America*, from whence their Seeds have been ſent to *Europe* and many of the Plants raiſed, which thrive very faſt here. In *Canada* theſe Trees grow to a large Size, where the 3d Sort is called *Meriſier*. The Natives of that Country make Canoes of the Bark of theſe Trees, which are very light, and of long Duration.

Both theſe Sorts may be propagated by Seeds, in the ſame Manner as the firſt, and are equally hardy; ſome of the Trees do now begin to produce their Katkins in *England*, ſo we may hope to have Plenty of their Seeds of our own Growth, for at preſent we are ſupplied with them from *America*. As theſe grow more vigorouſly than the common Sort, and thrive on the moſt barren Ground, they may be cultivated to great Advantage in *England*, for their Wood is much eſteemed in *Canada*, where the Trees grow to a large Size: They are by no Means an unſightly Tree in Parks, for their Stems are Strait, the Bark ſmooth, and their Leaves much larger than thoſe of the common Birch, ſo may be planted in Places where few other Trees will thrive.

BIDENS. *Tourn. Inſt. R. H.* 362. *Tab.* 262. *Lin. Gen: Plant.* 840. Water Hemp Agrimony.

The *Characters* are,

The common Empalement is erect, and often equal, compoſed of ſmall oblong concave Leaves; it hath a compound Flower, the Middle or Diſk is compoſed of hermaphrodite Flowers, which are Funnel-ſhaped and quinquefid. Theſe have five ſhort capillary Stamina, with cylindrical Summits, and an oblong Germen ſupporting a ſingle Style the Length of the Stamina, crowned by two oblong reflexed Stigma. The female Flowers which compoſe the Border are naked; theſe are all ſucceeded by a ſingle angular obtuſe Seed, having two or more Briſtles or Teeth, by which they faſten themſelves to whatever paſſes by them when ripe.

There are ſeveral Species of this Plant, which are ſeldom admitted into Gardens, ſome of which are common Weeds in *England*, therefore I ſhall only mention thoſe which are preſerved in the Gardens of the curious.

1. Bidens *foliis pinnatis ſerratis ſeminibus erecto-conſtantibus calycibus frondoſis corollis radiatis. Lin. Sp. Plant.* 832. Water Hemp Agrimony with winged ſawed Leaves, Seeds ſtanding erect, a very buſhy Empalement, and radiated Flower. This is the *Bidens Canadenſis latifolia flore luteo. Tourn. Inſt.* 362. Broad leaved *Cañada* Hemp Agrimony, with a yellow Flower.

2. Bidens *foliis oblongis integerrimis caule dichotomo floribus ſolitariis ſeſſilibus. Lin. Sp. Pl.* 832. Hemp Agrimony with oblong entire Leaves, a Stalk divided into two Parts, and a ſingle Flower growing cloſe to the Stalk. *Bidens nodiflorâ brunellæ folio. Hort. Elth.* 52. Hemp Agrimony, with a knotted Flower and Self-heal Leaf.

3. Bidens *foliis ſimplicibus ſerratis petiolatis, floribus globoſis, pedunculis elongatis ſeminibus lævibus. Lin. Sp. Plant.* 833. Hemp Agrimony with ſingle ſawed Leaves having Foot Stalks, globular Flowers with longer Foot Stalks, and ſmooth Seeds. *Bidens ſcabra flore niveo. Hort. Elth.* 55. Rough Hemp Agrimony, with a Snow-white Flower, and a Leaf with three Lobes.

4. Bidens *calyce oblongo ſquamoſo ſeminibus radii corolla non deciduâ coronatis. Juſſ.* Hemp Agrimony with an oblong ſcaly Empalement, and the Seeds crowned by the Rays of the Florets, which are permanent.

5. Bidens *foliis ovatis ſerratis petiolatis, caule fruticoſo. Hort. Cliff.* 399. Hemp Agrimony with oval ſawed Leaves having Foot Stalks, and a ſhrubby Stalk.

6. Bidens *foliis ternatis acutis ſerratis caule ſcandente floribus paniculatis.* Three leaved Hemp Agrimony, with pointed ſawed Lobes, a climbing Stalk, and Flowers growing in Panicles. This is the *Chryſanthemum trifoliatum ſcandens, flore luteo. Sloan. Cat. Jam.* 125. Three leaved climbing Corn Marigold, with a yellow Flower and a long bearded Seed with two Teeth.

7. Bidens *foliis ovatis ſerratis, inferioribus oppoſitis, ſuperioribus ternatis intermedio majore. Lin. Sp. Plant.* 833. Hemp Agrimony with oval ſawed Leaves, the lower ones growing oppoſite, but the upper having three Lobes, the Middle of which is the largeſt. This is the *Chryſanthemum conyzoides nodiflorum ſemine roſtrato bidente. Sloan. Cat. Jam.* 126. Corn Marigold like Fleabane, with a knotted Flower and double bearded Seed.

The firſt Sort grows naturally in *Virginia*, *Maryland*, and *Canada*, where it is often a troubleſome Weed. It riſes about 3 Feet high, ſending out many horizontal Branches garniſhed with trifoliate Leaves, deeply ſawed on their Edges; the Flowers are produced at the End of the Branches, in ſmall Cluſters, which are yellow, and ſucceeded by oblong ſquare Seeds, having two crooked Horns, by which they faſten themſelves to the Clothes of thoſe who paſs near them. There are two Sorts of this, one whoſe Flowers have a ſhort Empalement, which is *Tournefort*'s broad leaved *Canada Bidens*; the other hath a leafy Empalement, and is by *Juſſieu* diſtinguiſhed by the Title of *Capite folioſo*. But I am not very ſure of their being diſtinct Species, though I have many Years cultivated both; for their Seeds when ripe ſpread ſo far, that in a ſmall Garden, they cannot be kept ſeparate. It is eaſily propagated by Seeds ſown in Spring, in an open Situation, where if they are permitted to ſcatter, the Plants will come up the following Spring, and two or three of them may be tranſplanted where they are to grow, and after they are rooted, will require no farther Care. This is annual, and decays ſoon after the Seeds are ripe.

The 2d Sort grows naturally in warm Countries. This is an annual Plant, which riſes near 3 Feet high, dividing upward into ſeveral Branches, which are garniſhed with oblong entire Leaves; the Flowers come out ſingle at the Diviſions of the Branches, ſitting cloſe; theſe are white, and are ſucceeded by ſmooth Seeds.

This Sort muſt be ſown upon a moderate hot Bed in Spring, and afterward treated like other hardy annuals, planting them into the full Ground the latter End of *May*. They flower in *June*, and their Seeds ripen in Autumn, ſoon after which the Plants will decay.

The 3d Sort grows naturally in *South Carolina*, and at *Campeachy*, from whence the late Dr. *Houſtoun* ſent me the Seeds. This is alſo an annual Plant, which riſes 3 Feet high, dividing upward into many ſlender Branches, whoſe Joints are far aſunder; the Leaves come out by Pairs at each Joint, upon long ſlender Foot Stalks, which are oval, ending in a Point. The Flowers grow at the Extremity of the Branches, in ſmall globular Heads, very white, ſtanding upon very long Foot Stalks, and ſucceeded by ſmooth Seeds. This muſt be ſown upon a hot Bed, and treated as the former. It flowers and ſeeds about the ſame Time.

The Seeds of the 4th Sort were ſent from *Peru* to the Royal Garden at *Paris*, where it has flouriſhed a few Years paſt, and the Plants have produced Seeds there, which have been communicated to ſeveral curious Gardens in *Europe*. The Seeds were ſent me in the Year 1753, and the following Summer the Plants flowered, and produced good Seeds in the *Chelſea* Garden. It riſes to the Height of 4 Feet; the Stalks become hard and ligneous, and divide into many Branches, garniſhed with oblong ſmooth Leaves, which are entire; theſe are placed oppoſite by Pairs: At the Extremity of the Branches the Flowers are produced, each ſtanding ſingle upon a Foot Stalk garniſhed with ſmaller Leaves, cloſe to the Empalement of the Flower. This Empalement is compoſed of many Scales, placed *imbricatim*, like the Tiles on a Houſe, and cloſely embrace the Flower, which is compoſed of a Border of female Flowers, having each one Leaf, ſtretched out like a Tongue, forming the Ray of the Flower; and in the Center are many hermaphrodite Flowers, which are tubulous, and theſe compoſe the Diſk of the Flower: Each of theſe have five ſlender Stamina, ſupporting a globular Summit. In the Center is placed the Germen, which becomes a ſingle oblong Seed. The whole of the Flower continues, and never falls off; ſo that when the Seeds are ripe, the Rays of the Flower are remaining firm, and only change their Colour, adhering ſo cloſely to the Seeds, as to render it difficult to part them. The Flowers when blown are as large as thoſe of the common Marigold, and are of a yellow Colour.

The Seeds of this Plant muſt be ſown upon a hot Bed in Spring, and when the Plants come up, they muſt be tranſplanted to another hot Bed, to bring them forward; but they muſt not be drawn too much, which will render them very weak; therefore when the Weather is favourable, they ſhould have a large Share of Air admitted to them. By the Beginning of *June* they ſhould be inured to bear the open Air by Degrees, and about the Middle of that Month, they ſhould be tranſplanted, with Balls of Earth to their Roots, ſome of them into Pots, and others into warm Borders, ſhading them until they have taken Root; after which they will require no farther Care, but to water them in dry Weather. In *July* the Plants will flower, and the Seeds are ripe in *October*, ſoon after which the Plants decay. But in wet cold Seaſons the Seeds will not ripen in *England*, unleſs the Plants are ſheltered under Glaſſes.

The 5th Sort riſes with a ſhrubby Stalk, to the Height of 6 or 7 Feet, dividing into many Branches, whoſe Joints are very diſtant, at each of which are placed two oval Leaves, which are ſlightly ſawed on their Edges, and have ſhort Foot Stalks. The Flowers are produced at the End of the Branches in ſmall Cluſters, each ſtanding upon a long naked Foot Stalk; theſe are ſucceeded by flat Seeds, having two ſhort Teeth at their Extremity. I received the Seeds from *Carthagena* in *New Spain*. This is propagated by Seeds, ſown on a hot Bed in Spring; and when the Plants are fit to remove, they muſt be each planted in a ſmall Pot, and plunged into a freſh hot Bed, and treated as other tender Plants from the ſame Countries, and in Autumn placed in the Stove: The following Summer they will flower and produce Seeds, but the Plants will abide ſome Years with proper Management.

The 6th Sort riſes with a climbing ſlender Stalk, to the Height of 10 Feet, dividing into many Branches, garniſhed with trifoliate ſawed Leaves: The Flowers grow in large Panicles at the End of the Branches; they are yellow, and ſucceeded by flat Seeds having two Teeth. This grows naturally in *Jamaica*, from whence I received the Seeds. It muſt be treated as the former Sort, and the Plants will continue two or three Years.

The 7th Sort is annual. It riſes about 2 Feet high, and ſends out ſeveral lateral Shoots, which at the Bottom have oval Leaves placed by Pairs at the Joints, but upward they are trifoliate, the middle Lobe being very large, and the two ſide ones ſmall; the Flowers are produced at the Wings of the Leaves, upon ſhort leafy Foot Stalks, and are yellow, but very ſmall. It flowers in *July*, the Seeds ripen in Autumn and muſt be ſown on a hot Bed, and treated as the 2d Sort.

BIFOLIUM, Twyblade. *See* Ophrys.

BIGNONIA. *Tourn. Inſt.* 164. *Lin. Gen. Plant.* 677. Trumpet Flower, or Scarlet Jaſmine.

The *Characters* are,

The Empalement is Cup-ſhaped, quinquefid, and of one Leaf. The Flower is of the ringent, or grinning Kind, tubulous, with long Chaps, which are ſwelling, and Bell-ſhaped, divided into five Parts at the Top; the two upper Segments are reflexed, and the under ſpread open; it hath four Awl-ſhaped Stamina, ſhorter than the Petal, two longer than the other, having oblong reflexed Summits. In the Center is an oblong Germen, ſupporting a ſlender Style, crowned by a roundiſh Stigma. The Germen afterward becomes a bivalve Pod, with two Cells, filled with compreſſed winged Seeds, lying over each other imbricatim.

The *Species* are,

1. BIGNONIA *foliis pinnatis, foliolis inciſis, geniculis radicatis. Lin. Hort. Cliff.* 217. *Bignonia* with winged Leaves, which are cut on their Edges, and Roots coming out at their Joints. This is the *Bignonia Americana Fraxini folio flore amplo Phœnicio. Tourn. Inſt.* 164. *American Bignonia* with an Aſh Leaf, and a large Scarlet Flower, commonly called Trumpet Flower.

2. BIGNONIA *foliis pinnatis minoribus, foliolis mucronatis, marginibus ſerratis geniculis radicatis. Bignonia* with ſmaller winged Leaves, ending in a ſharp Point, ſawed on their Edges, and Roots coming from the Joints. *Bignonia fraxini foliis, coccineo flore minore. Cateſb.* Aſh-leaved *Bignonia*, with a ſmaller Scarlet Flower.

3. BIGNONIA *foliis ſimplicibus cordatis, caule erecto, floribus diandris. Lin. Sp. Plant.* 622. *Bignonia* with ſingle Heart-ſhaped Leaves, an upright Stalk, and Flowers with two Stamina. This is the *Bignonia Urucu foliis. Cateſb. Carol.* 1. p. 49. *Bignonia* with *Anotto* Leaves, a dull white Flower ſpotted with purple and yellow within, commonly called *Catalpa*.

4. BIGNONIA *foliis pinnatis, foliolis lanceolatis acutis ſerratis, caule erecto, floribus paniculatis erectis. Bignonia* with winged Leaves, having acute ſawed Lobes, an upright Stalk, and Flowers growing in Panicles erect. *Bignonia arbor flore luteo. Plum. Sp. Plant.* 5. Tree *Bignonia* with a yellow Flower, and an Aſh Leaf.

5. BIGNONIA *foliis conjugatis cirrhoſis foliolis cordato-lanceolatis foliis imis ſimplicibus. Vir. Cliff.* 59. *Bignonia* with conjugated Leaves, having Tendrils; the Leaves Spear-ſhaped, and the lower Leaves ſingle. This is the *Bignonia Americana. Breyn. Ic.* 33. *American Bignonia*, putting out Tendrils, and a ſhort Pod.

6. BIGNONIA *foliis conjugatis, cirrho breviſſimo arcuato tripartito. Lin. Sp. Plant.* 623. *Bignonia* with jointed Leaves, and ſhort arched Tendrils, divided into three Parts. This is the *Bignonia Americana capreolis aduncis donata, ſiliquâ longiſſimâ. Tourn. American Bignonia* putting out crooked Tendrils, and a very long Pod.

7. BIGNONIA *foliis conjugatis cirrhoſis, foliolis ovatis acuminatis undatis perennentibus. Bignonia* with jointed Leaves, having Tendrils, whoſe Lobes are oval, pointed, waved, and ever-green.

8. BIGNONIA *foliis ſimplicibus lanceolatis caule volubili. Lin. Sp. Plant.* 623. *Bignonia* with ſingle Spear-ſhaped Leaves, and a twining Stalk. This is the *Jaſminum luteum odoratum Virginianum. Park. Cateſb.* 1. p. 53. Yellow ſweet-ſcented Jaſmine of *Virginia*, which is climbing and ever-green.

9. BIGNONIA *foliis digitatis integerrimis. Hort. Cliff.* 497. *Bignonia* with fingered Leaves, which are entire. *Bignonia arbor pentaphylla flore roſeo. Plum. Sp. Plant.* 5. Five leaved Tree *Bignonia* with a Roſe Flower.

10. BIGNONIA *foliis imis digitatis, ſuperioribus ſimplicibus vel ternatis, caule erecto arboreo. Bignonia* with under Leaves fingered, the upper ſingle, or trifoliate, and an upright Tree Stem. This is the *Leucoxylon arbor ſiliquoſa, quinis foliis, floribus Nerii, alato ſemine. Pluk. Alm.* Tree Milkwood, having Pods, with five Leaves, the Oleander Flower, and winged Seed; called in *America*, White, or Milkwood, and Tulip Flower.

11. BIGNONIA *foliis conjugatis cirrhoſis, foliolis cordato-ovatis, floribus racemoſo-paniculatis. Lin. Sp. Plant.* 623. *Bignonia* with jointed Leaves, having Tendrils, the Lobes oval and Heart-ſhaped, and Flowers in branching

Panicles. *Bignonia bifolia ſcandens, flore violaceo odoro, Plum. Cat.* 5. Climbing two leaved *Bignonia*, with a ſweet Violet Flower, and a hard oval Fruit.

12. BIGNONIA *foliis bipinnatis foliolis lanceolatis integris. Lin. Sp. Plant.* 625. *Bignonia* with double winged Leaves, entire and Spear-ſhaped. This is the *Arbor Guajaci latiore folio, Bignonia flore cæruleo. Cateſb. Carol.* 1. p. 42. commonly called Baſtard *Guajacum.*

13. BIGNONIA *foliis conjugatis cirrhoſis-foliolis cordatis foliis imis ternatis. Vir. Cliff.* 60. *Bignonia* with jointed Heart-ſhaped Leaves, having Tendrils, and the under Leaves trifoliate. This is the *Pſeudo Apocynum foliculis maximis obtuſis. Mor. Hiſt.* 3. p. 62. Baſtard Dogſbane with large blunt Leaves, and large winged Seeds.

14. BIGNONIA *foliis conjugatis cirrhoſis foliolis cordato-ovatis ſubtus pubeſcentibus, floribus paniculatis ſiliquis longiſſimis compreſſis. Bignonia* with jointed Heart-ſhaped Leaves, hairy beneath, and having Tendrils, Flowers growing in Panicles, and long compreſſed Pods. This is the *Bignonia bifolia fruteſcens, foliis ſubtus villoſis, Houſt. Cat.* Two leaved ſhrubby *Bignonia*, with Leaves hairy on their under Side, and long compreſſed Pods.

15. BIGNONIA *foliis ternatis glabris, foliolis ovatis acuminatis, caule fruticoſo ramoſo, floribus paniculatis, ſiliquis compreſſis.* Smooth three leaved *Bignonia*, with oval Lobes ending in a Point, a ſhrubby branching Stalk, Flowers growing in Panicles, and compreſſed Pods. *Bignonia fruteſcens triphylla glabra. Houſt. Cat.* Smooth three leaved ſhrubby *Bignonia* with long compreſſed Pods.

The 1ſt Sort grows naturally in *Virginia* and *Canada*, and the 2d in *Carolina*; they have both been old Inhabitants of the *Engliſh* Gardens, but the 1ſt is the moſt common in *Europe*. Theſe have been ſuppoſed to be the ſame, but there is a great Difference; the 1ſt having much larger Leaves, compoſed of a greater Number of Lobes, which are longer, and deeper cut on their Edges; the Flowers are larger, and of a paler Colour, and the Pods longer. This Sort frequently produces Pods in *England*, but the 2d has had not the leaſt Appearance of any, though the Plants are as large, and have grown in the ſame Situation many Years. Theſe Differences are conſtant from Seeds, ſo they are not ſeminal Variations.

Theſe have large rough Stems, which ſend out many weak trailing Branches, putting out Roots at their Joints, which faſten themſelves to the Trees in their natural Places of Growth, whereby they climb to a great Height; and in *Europe*, where they are generally planted againſt Walls, they faſten themſelves thereto by their Roots, which ſtrike into the Mortar of the Joints, ſo ſtrongly, as to ſupport their Branches, and will riſe to the Height of 40 or 50 Feet. The Branches are garniſhed with winged Leaves at every Joint, placed oppoſite, which are compoſed of four Pair of ſmall Leaves, terminated by an odd one; theſe are ſawed on their Edges, and end in a long ſharp Point. The Flowers are produced at the Ends of the Shoots of the ſame Year, in large Bunches; theſe have long ſwelling Tubes, ſhaped ſomewhat like a Trumpet, from whence they had their Name. They are of an Orange Colour, and appear the Beginning of *Auguſt.*

The 2d Sort is like the 1ſt, but the Leaves are ſmaller; the Lobes are placed cloſer, and the Flowers not ſo large, but of a beautiful red Colour; theſe appear at the ſame Time as the former.

Both theſe Sorts are very hardy, ſo will thrive in the open Air; but as they have trailing Branches, they muſt be ſupported; therefore they are uſually planted againſt Walls, or Buildings, where, if they have Room, they will ſpread to a great Diſtance, and riſe very high, ſo are very proper for covering Buildings, which are unſightly. They may alſo be trained up againſt the Stems of Trees, where they may be ſo managed, as to make a fine Appearance when they are in flower.

They are propagated by Seeds, but the young Plants ſo raiſed do not flower in leſs than ſeven or eight Years; therefore thoſe which are propagated by Cuttings or Layers, from flowering Plants, are moſt eſteemed, becauſe they will flower in two or three Years after planting. The old Plants alſo ſend out many Suckers from their Roots, which may be taken off, and tranſplanted where they are to remain, for theſe Plants will not tranſplant ſafely if they are old.

The neceſſary Culture for theſe Plants after they are eſtabliſhed, is to cut away all the ſmall weak Shoots of the former Year in Winter, and ſhorten the ſtrong ones to about 2 Feet long, that young Shoots may be obtained for flowering the following Summer; theſe Plants are of long Duration; for ſome which have been planted more than ſixty Years, are now very vigorous, and produce Flowers in Plenty every Seaſon.

If theſe Plants are propagated by Seeds, they ſhould be ſown upon a moderate hot Bed to bring up the Plants, which ſhould be ſoon inured to the open Air, to prevent their being drawn up weak; and the firſt Winter theſe young Plants ſhould be ſcreened from hard Froſt, which will kill their tender Shoots; but the Spring following they may be planted in the full Ground, in a Nurſery Bed, at a Foot Diſtance from each other, where they may remain one or two Years to get Strength, and afterwards planted where they are deſigned to grow.

The 3d Sort was brought into *England* by Mr. *Cateſby*, about 30 Years paſt, who found it growing naturally on the Back of *South Carolina*, at a great Diſtance from the *Engliſh* Settlements, and brought the Seeds to *Charles Town*, where the Inhabitants have propagated and diſperſed it through moſt of the *Engliſh* Settlements in *North America*. It is alſo now very plenty in the *Engliſh* Gardens, eſpecially near *London*, where there are ſome of them near 20 Feet high, with large Stems.

This riſes with an upright Stem, covered with a ſmooth brown Bark, and ſends out many ſtrong lateral Branches, garniſhed with very large Heart-ſhaped Leaves, placed oppoſite at every Joint. The Flowers are produced in large branching Panicles toward the End of the Branches, and are of a dirty white Colour, with a few purple Spots, and faint Stripes of yellow on their Inſide. The Tube of the Flower is much ſhorter, and the upper Part more expanded, than thoſe of the two former Sorts, and the Segments are deeper cut, and waved on their Edges. The Flowers are in *America* ſucceeded by very long taper Pods, filled with flat winged Seeds, lying over each other like the Scales of Fiſh. In *England* there has not as yet been any of the Pods produced; but the Seeds are annually brought over from *South Carolina*. Theſe ſhould be ſown in Pots, and plunged into a moderate hot

Bed to bring up the Plants, which ſhould be inured to the open Air by Degrees, and, in the Beginning of *June*, placed abroad in a ſheltered Situation, till Autumn, when they ſhould be put under a common Frame to ſcreen them from Froſt in Winter; but in mild Weather they muſt be fully expoſed to the open Air. The following Spring theſe may be taken out of the Pots, and planted in a Nurſery Bed, in a warm Situation, where they may remain two Years to get Strength, and afterwards planted in the Places where they are deſigned to remain. Theſe Plants, when young, are frequently injured by Froſt, for they ſhoot pretty late in the Autumn, ſo that the early Froſts often kill the Extremity of their Branches; but as the Plants advance in Strength, they become more hardy, and are ſeldom injured but in very ſevere Winters. It is late in the Spring before theſe Trees come out, which has often cauſed Perſons to believe they were dead, and ſome have been ſo imprudent, as to cut them down on that Suppoſition, before the Tree was ſo well known.

It may alſo be propagated by Cuttings, which ſhould be planted in Pots in the Spring before the Trees begin to puſh out their Shoots, and plunged into a moderate hot Bed, obſerving to ſhade them from the Sun in the Middle of the Day, and refreſh them occaſionally with Water, which muſt not be given to them in too great Plenty. In about ſix Weeks theſe will have taken Root, and made Shoots above, ſo ſhould have Plenty of Air admitted to them conſtantly, and hardened by Degrees to bear the open Air, into which they ſhould be removed, and treated in the ſame Manner as the ſeedling Plants, and the Spring following planted out into a Nurſery Bed, as before directed.

As theſe Trees have very large Leaves, they require a ſheltered Situation, for where they are much expoſed to ſtrong Winds, their Leaves are often torn and rendered unſightly, and many Times their Branches ſplit and broken, their Leaves being ſo large, that the Wind has great Force againſt them. Theſe produce their Flowers in *Auguſt*, they delight in a light moiſt Soil, where they make great Progreſs, and in a few Years will produce Flowers. It is generally known in the Gardens by the *Indian* Title of *Catalpa*.

The 4th Sort is a Native of the warmer Parts of *America*, where it was diſcovered by Father *Plumier*, who made a Drawing of it, and gave the Title of *Clematitis* to it, which he afterward altered to *Bignonia*, when he became better acquainted with *Tournefort's Syſtem of Botany*. This riſes with an upright Stem, to the Height of 12 or 14 Feet, ſending out many Side Branches, garniſhed at every Joint by two long winged Leaves placed oppoſite; the ſmall Leaves which compoſe theſe, are long and Spear-ſhaped, ending in a Point, and ſlightly ſawed on their Edges, each Leaf being compoſed of ſix Pair, and terminated by an odd one. The Flowers are produced in looſe Panicles at the End of the Branches, and are ſhaped like thoſe of the other Species, but ſpread open more at the Top. Theſe are yellow, and ſucceeded by compreſſed Pods about 6 Inches long, having 2 Rows of flat winged Seeds, like thoſe of the other Species.

I received this Sort firſt in 1729, from *La Vera Cruz*, where the late Dr. *Houſton* found it growing naturally in great Plenty; I ſince received the Seed of it from the Iſland of *Berbuda*, by the Title of Candle Wood.

This Sort is propagated by Seeds, which muſt be ſown on a hot Bed; and the Plants afterward tranſplanted into ſeparate ſmall Pots, filled with light freſh Earth, and plunged into a freſh hot Bed, to bring the Plants forward, that they may obtain Strength before Winter; in the Autumn they muſt be removed into the Bark Stove, and during the Winter ſhould have but little Water, but in Summer they muſt be frequently refreſhed with it, but not given in too great Plenty. The Plants ſhould conſtantly remain in the Bark Stove, and be treated in the ſame Manner as other tender Plants from thoſe Countries. The third Year from Seed they will flower, but they do not produce Seeds in *England*.

The 5th Sort grows naturally in *Virginia*, and other Parts of *America*; this hath very ſlender trailing Stalks, which muſt be ſupported; where it naturally grows, the Branches faſten themſelves by their Tendrils to whatever Plants are near them, and extend to a great Diſtance: In this Country they require the Aſſiſtance of a Wall with a good Aſpect, for they are impatient of much Cold, ſo ſhould be covered in ſevere Froſt; the Branches are cloathed with oblong Leaves, which remain green all the Year; theſe are often ſingle at Bottom, but upward are placed by Pairs oppoſite at each Joint; the Flowers are produced at the Wings of the Leaves, which are yellow and ſhaped like thoſe of the Foxglove; theſe appear in *Auguſt*, but are not ſucceeded by Pods in this Country. This is propagated by Seeds, which ſhould be ſown on a moderate hot Bed, and treated as the 1ſt and 2d Sorts. The ground about the Roots of theſe Plants, ſhould be covered in Autumn with ſome old Tanners Bark to keep out the Froſt in Winter; and in very ſevere Froſt, the Branches ſhould be covered with Mats, to prevent their being deſtroyed. With this Management I have had the Plants flower very well in the *Chelſea* Garden.

The 6th Sort hath ſlender Stalks like the former, which require the ſame Support; theſe are garniſhed with ſmall oval Leaves, entire, and placed oppoſite by Pairs on each Side, at every Joint; at the ſame Places come out the Tendrils, by which they faſten themſelves to the Plants which grow near them; theſe end in three diſtinct Parts; the Flowers come out from the Wings of the Leaves, which are ſhaped like thoſe of the former Sort, but ſmaller, and are not ſucceeded by Seeds in this Country. This grows naturally in *Carolina*, and the *Bahama Iſlands*, but will live in the open Air, if planted againſt a South Wall and ſheltered in very ſevere Froſt. It is propagated as the former Sort.

The 7th Sort hath very weak ſlender Branches, which put out Tendrils at the Joints, by which they faſten themſelves to the neighbouring Plants: At each Joint there are four Leaves, two on each Side oppoſite; theſe are oval, pointed, and waved on their Edges, of a bright Green, and continue through the Year; the Branches ramble very far where they have Room; but I have not ſeen any Flowers produced on them, though there are ſeveral very large Plants in the Gardens. I received this Sort from *La Vera Cruz*, in *New Spain*; it thrives againſt a warm Wall in the open Air very well, with the ſame Treatment as the two former Sorts.

The 8th Sort grows naturally in *South Carolina*, where it ſpreads over the Hedges, and at the Seaſon of flowering, perfumes the Air to a great Diſtance; it alſo grows in *Virginia*, but not in ſo great Plenty as at *Carolina*; the Inhabitants there call it yellow Jaſmine, I ſuppoſe from the ſweet Odour of its Flowers. This riſes with ſlender Stalks, which twiſt themſelves round the neighbouring Plants, and mount to a conſiderable Height; the Branches are garniſhed with oblong pointed Leaves, which come out ſingle and oppoſite to each other at every Joint; theſe are ever-green. The Flowers come out from the Wings of the Leaves at every Joint, ſometimes but two, at other Times four at each Joint; theſe ſtand erect, are Trumpet-ſhaped, yellow, and have a very ſweet Scent, in the Countries where they naturally grow; theſe are ſucceeded by ſhort taper Pods, filled with ſmall winged Seeds.

The Plants of this Sort, when young, are impatient of Cold, ſo muſt be ſheltered in Winter until they have obtained Strength, when they ſhould be planted againſt a warm Wall, and in Winter protected from Froſt by Coverings of Mats, and the Ground about their Roots covered with Tan. With this Management I have had them flower very well in the *Chelſea* Garden. It is propagated by Seeds, as the former Sorts.

The 9th Sort was ſent me from *Jamaica*. This riſes with an upright Stem, near 20 Feet high, ſending out many lateral Branches, which are covered with a white Bark. The Leaves come out oppoſite at the Joints, upon long Foot Stalks, theſe are compoſed of five oval ſtiff Leaves, joined at one Center at their Baſe, where they are narrow, but widen toward the Top, where they are rounded and obtuſe. Theſe are of a pale green, inclining to white on their under Side; the Flowers are produced at the Ends of the Branches, four or five together, on very ſhort Foot Stalks, they are narrow at Bottom, but the Tube enlarges upward, and at the Top ſpreads open wide. They are of a pale bluiſh Colour, ſmell ſweet, and are ſucceeded by taper crooked Pods about 4 Inches long, which are filled with oval compreſſed Seeds, with Wings of a Silver Colour.

This Sort will not thrive in *England*, but in a Stove. It is propagated by Seeds, which muſt be ſown on a hot bed and the Plants treated as the 4th Sort.

The 10th Sort I received from *Barbadoes*, by the Title of White Wood, where it riſes with an upright Stem, to the Height of 43 Feet; and the Seeds are diſperſed by Wind to the neighbouring Lands, where the Plants come up in great Plenty. This and the former Sort have been generally confounded, and ſuppoſed to be the ſame; but the growing Plants are extremely different; for the under Leaves of this are ſometimes compoſed of five, at other times of four oval Leaves; and on the upper Part of the Branches, they come out ſingle, placed by Pairs oppoſite: Theſe are as large as thoſe of the Bay Tree, of equal Thickneſs, and round at their End; each of theſe have a long Foot Stalk, whereas thoſe of the former join at their Baſe to one Center. The Flowers of this Sort are produced ſingle, at the Wings of the Leaves, which have a narrow Tube near 2 Inches long, but ſpread open very wide at the Top, where they are cut into five unequal Segments, fringed on their Borders. The Flowers are white, and have an agreeable Odour, but the Pod I have not ſeen.

This Plant muſt be preſerved in the Bark Stove, and treated as the 4th Sort. It is propagated by Seeds, but will take Root from Cuttings in Summer, if planted in Pots, and plunged into a Bark Bed. It has flowered ſeveral Years in the *Chelſea* Garden, in *Auguſt*.

The 11th Sort was ſent me from *La Vera Cruz*, this riſes with ligneous Stalks, which put out Tendrils at the Joints, whereby they faſten themſelves to the neighbouring Plants; the Leaves come out double, on each Side the Branches, upon pretty long Foot Stalks, two at each Joint oppoſite, which are Heart-ſhaped and entire, having a fine hairy Down on their under Side. The Flowers grow in looſe Spikes at the Ends of the Branches, which are tubulous, and do not ſpread much at the Top; they are of a Violet Colour, and ſmell very ſweet. Theſe in their native Country are ſucceeded by oval, hard, ligneous Seed Veſſels, which open in four Parts, and are full of compreſſed winged Seeds.

This Sort is propagated by Seeds, ſown on a hot Bed, and the Plants muſt be treated as the fourth Sort; they will not thrive here unleſs placed in the Bark Stove.

The 12th Sort grows naturally in the *Bahama Iſlands*, from whence Mr. *Cateſby* ſent the Seeds in 1724, and many of the Plants were raiſed in the Gardens near *London*. This riſes to the Height of 20 Feet, where it grows naturally, ſending out many lateral Branches, garniſhed with compound winged Leaves, each having eleven alternate Wings, with Spear-ſhaped ſmall Lobes, which grow alternate, and are entire; at the Ends of the Branches the Flowers are produced in very looſe Panicles; the Foot Stalks branching into three or four, each ſuſtaining a ſingle blue Flower, with a long ſwelling Tube, cut into five unequal Segments at the Top, where it ſpreads open. The Flowers are ſucceeded by oval Seed Veſſels, which open in two Parts, and are filled with flat winged Seeds.

The 13th Sort hath a woody Stem, ſending out many Branches, which have four narrow Borders or Wings running longitudinally, ſo as to reſemble a ſquare Stalk; the Leaves are produced by Pairs, on each Side the Branches oppoſite; they are Heart-ſhaped, ſmooth, and have ſhort Foot Stalks; theſe have Tendrils coming out by their Foot Stalks, which faſten themſelves to the Plants which grow near them, and thereby riſe to a great Height. The Flowers are produced in ſmall Cluſters from the Wings of the Leaves, which have pretty long Tubes, ſpread open at the Top, and are of a pale yellow Colour. Theſe are ſucceeded by flat Pods a Foot in Length, which have two Rows of flat winged Seeds, joined to the intermediate Partition.

This Sort was ſent me from *Campeachy*, where it naturally grows, and riſes to the Tops of the talleſt Trees, to whoſe Branches theſe Plants faſten themſelves by their Tendrils or Claſpers, and are thereby ſupported. This is propagated by Seeds, which muſt be ſown on a hot Bed, and the Plants treated as the 4th Sort; for they will not thrive in this Country, unleſs they have a warm Stove, where the Branches will riſe to the Height of 20 Feet in three Years; and if permitted, will ſpread to a great Diſtance. It has flowered in the Garden at *Chelſea*, but doth not produce Pods in *England*.

The 14th Sort was ſent me from *Campeachy*, by Mr. *Robert Millar*; this hath woody Stalks, which riſe to a great Height, climbing on the Trees which grow near it, faſtening themſelves by Claſpers, and ſending out many ligneous Branches, which are garniſhed with oval Heart-ſhaped Leaves, by fours, two on each Side, growing oppoſite at the Joints; theſe are covered on their under Side with a ſoft hairy Down, of a yellowiſh Colour. The Flowers are produced in looſe Panicles at the End of the Branches, and of a pale yellow Colour, ſhaped like thoſe of the Foxglove; theſe are ſucceeded by flat Pods a Foot long, having a Border on each Side, and contain two Rows of flat winged Seeds.

This Plant is tender, ſo muſt be conſtantly kept in the Bark Stove, and treated as the 4th Sort. It is propagated by Seeds, which muſt be obtained from the Country where it grows naturally, for it doth not produce any in *England.*

The 15th Sort was ſent me from *La Vera Cruz.* This hath a woody Stem covered with an Aſh-coloured Bark, which riſes to the Height of 10 Feet, ſending out many Side Branches, garniſhed with trifoliate Leaves, placed oppoſite at each Joint, which are very ſmooth, oval, and ending in Points. The Flowers come out at the Extremity of the Branches in looſe Panicles, and are of a dirty white Colour. Theſe are ſucceeded by flat narrow Pods, containing two Rows of flat winged Seeds.

This Sort is propagated by Seeds, which muſt be ſown on a hot Bed, and the Plants treated as the 4th Sort; it muſt conſtantly remain in the Bark Stove.

BIHAI. *See* Muſa.

BINDWEED. *See* Convolvulus.

BIRCH TREE. *See* Betula.

BISCUTELLA. *L. G. Pl.* 724. *Thlaſpidium. Tourn.* Buckler Muſtard, or Baſtard Mithridate Muſtard.

The *Characters* are,

The Empalement is compoſed of four Leaves, which are pointed. The Flower hath four Petals, placed in Form of a Croſs, which are obtuſe and ſpread open; it hath ſix Stamina, four long and two ſhort, placed oppoſite, having ſingle Summits. In the Center is ſituated an orbicular compreſſed Germen, ſupporting a ſingle permanent Style, crowned with an obtuſe Stigma; the Germen becomes a plain compreſſed erect Capſule, with two convex Lobes, having two Cells, terminated by the rigid Style, which is joined to the Side of the Partition, each Cell containing one compreſſed Seed.

The *Species* are,

1. Biscutella *calycibus nectario utrinque gibbis, ſiliculis in ſtylum coeuntibus. Lin. H. C.* 329. Buckler Muſtard, with the Cup of the Nectarium ſwelling on each Side, and ſmall Pods joined to the Style. This is the *Thlaſpidium hirſutum calyce floris auriculato.* Baſtard Mithridate Muſtard, with an auriculated Flower Cup.

2. Biscutella *ſiliculis orbiculato-didymis a ſtylo divergentibus. Hort. Cliff.* 329. Buckler Muſtard, with a double orbicular Pod, diverging from the Style. *Thlaſpidium Monſpelienſe hieracii folio hirſuto. Tourn.* Mithridate Muſtard of *Montpelier,* with a rough Hawkweed Leaf.

3. Biscutella *hirſuta foliis oblongis dentatis ſemi-amplexicaulibus floribus ſpicatis ſtylo breviore.* Hairy Buckler Muſtard, with oblong indented Leaves which half embrace the Stalk, Flowers growing in Spikes, and a ſhorter Style. This is the *Thlaſpidium Apuliæ ſpicatum. Tourn. Inſt.* Spiked *Thlaſpidium* of *Apulia.*

4. Biscutella *foliis lanceolato-linearibus hiſpidis, floribus corymboſis terminalibus.* Buckler Muſtard, with linear Spear-ſhaped rough Leaves, and Flowers growing in a Corymbus at the Termination of the Stalk. This is the *Thlaſpidium anchuſæ folio. Tourn. Inſt.* 215. Baſtard Mithridate Muſtard with an Alkanet Leaf.

The 1ſt Sort grows naturally in the South of *France* and *Italy,* where it riſes about a Foot high: but in a Garden generally grows 2 Feet high, dividing into ſeveral Branches, which at every Joint have one oblong entire Leaf a little indented; thoſe on the lower Part of the Stalk being broader and more obtuſe than thoſe on the upper. The Flowers are produced at the Ends of the Branches in looſe Panicles, which are compoſed of four obtuſe Petals of a pale yellow Colour; theſe are ſucceeded by double round compreſſed Seed Veſſels, ſwelling in the Middle, where is lodged a ſingle round flat Seed, the Style of the Flower ſtanding upright between the two ſmall Veſſels, joined to their Borders.

The 2d Sort grows naturally in the South of *France, Italy,* and *Germany,* from whence I received the Seeds, and dried Samples of the Plant, which are not more than 6 Inches high, though they are the entire Plants with their Roots, but in the Garden they grow 2 Feet high. This hath many long narrow Leaves, ſpreading near the Ground, which are deeply indented on each Side, reſembling thoſe of Hawkweed, and are hairy; from the Center ariſes the Stalk, which divides upward into many ſmaller, having no Leaves on them, and are terminated by looſe Panicles of yellow Flowers, compoſed of four Petals, placed in form of a Croſs. Theſe are ſucceeded by round compreſſed Seed Veſſels like the former, but are ſmaller, and the Style of the Flowers bends from them.

The 3d Sort ſends out many oblong hairy Leaves, which are ſlightly indented on their Edges, from among theſe there ariſes a hairy branching Stalk, which grows 2 Feet high, and at each Joint is placed one oblong indented Leaf, which half embraces the Stalk at their Baſe; each Branch is terminated by a cloſe Spike of pale yellow Flowers, which are ſucceeded by round compreſſed Seed Veſſels like the other Sorts, but the Style of the Flower, which is joined to them, is ſhorter than thoſe of the other Species.

The 4th Sort grows naturally in *Spain* and *Sicily.* This ſeldom riſes more than a Foot high; the Leaves at the Bottom grow upright, they are near 4 Inches long, narrow, ſtiff, and ſet on every Side with rough prickly Hairs. The Stalk is ſingle, ſeldom putting out any ſide Branches, and naked, having no Leaves. The Flowers are produced in compact Cluſters at the End of the Branches, which are of a deep yellow Colour, and ſhaped like thoſe of the other Species, as are alſo the Seed Veſſels, but ſmaller.

All theſe Sorts are annual Plants, which periſh ſoon after they have perfected their Seeds. Theſe ſhould be ſown either in Spring, or Autumn, on a Border of light Earth, in an open Situation, where they are to remain. Thoſe which are ſown in Autumn will come up in about three Weeks, and the Plants will live through the Winter without any Protection, ſo will flower earlier the following Summer, whereby good Seeds may always be obtained, whereas thoſe which are ſown in Spring, in bad Seaſons decay before their Seeds are ripe. The autumnal

Plants flower in *June*, and the Spring in *July*, their Seeds ripen about ſix Weeks after, which if permitted to ſcatter, Plenty of young Plants will be produced without any Care.

Theſe require no farther Culture, but to keep them clean from Weeds, and thin the Plants where they are too cloſe, leaving them eight or nine Inches aſunder. They are preſerved in the Gardens of the curious in Botany, but have no great Beauty to recommend them. I have cultivated theſe Sorts many Years, and have never obſerved either of them to vary, therefore make no Doubt of their being diſtinct Species.

BISERRULA. *Lin. G. P.* 800. *Pelecinus. Tourn.*

The *Characters* are,

The Flower hath a tubulous Empalement of one Leaf, erect, and ſlightly indented at the Top in five Parts, which are equal, the two upper ſtanding at a Diſtance. The Flower is papilionaceous, having a large roundiſh Standard, whoſe Edges are reflexed. The Wings are oblong, but ſhorter than the Standard; and the Keel is of the ſame Length with the Wings, obtuſe, and bending upward. It hath ten Stamina, nine of which are joined, and the other ſingle, with their Ends pointing upward. In the Center is ſituated an oblong compreſſed Germen, ſupporting an Awl-ſhaped Style, crowned by a ſingle Stigma; theſe are included in the Keel. The Germen becomes a flat narrow Pod, indented on both Edges like the Saw of the Sword Fiſh, having two Cells, filled with Kidney-ſhaped Seeds.

We have but one Species of this Genus, which is,

Biserrula. *Hort. Cliff.* 361. We have no *Engliſh* Name for this Plant. It is the *Pelecinus vulgaris. Tourn. Inſt.* 417. Common *Pelecinus*, and the *Securidaca ſiliquis planis utrinque dentatis. C. B. P.* 349. Hatchet Vetch with plain Pods, indented on each Side.

This is an annual Plant, which grows naturally in *Italy*, *Sicily*, *Spain*, and the South of *France*. It ſends out many angular Stalks, which trail on the Ground, and are ſubdivided into many Branches, which are garniſhed with long winged Leaves, compoſed of many Pair of Lobes, and terminated by an odd one; theſe are Heart-ſhaped; toward the upper Part of the Branches come out the Pedicle of the Flowers, which ſuſtains ſeveral ſmall Butterfly Flowers, of a purpliſh Colour, collected together, which are ſucceeded by plain Pods, about one Inch long, indented on both Sides the whole Length, divided in the Middle by a longitudinal Nerve, containing two Rows of Kidney-ſhaped Seeds.

It is propagated by Seeds, which ſhould be ſown in Autumn, on a Bed of light Earth, where the Plants will come up in about three Weeks, and live in the open Air very well. Theſe ſhould be ſown where they are deſigned to remain, or tranſplanted very young; for when they are large, they will not bear removing. When the Plants come up, they require no other Care, but to keep them clean from Weeds, and where too near, they ſhould be thinned to about a Foot Diſtance. They flower in *June*, and the Seeds ripen in *September*.

The Seeds of this Plant may alſo be ſown in Spring, and treated in the ſame Manner as before directed; but theſe will not flower till the Middle of *July*, ſo that unleſs the Autumn proves warm, they will not ripen Seeds; for which Reaſon I have directed their being ſown in the Autumn, as ſoon as they are ripe. Two or three of theſe Plants may be allowed a Place in Gardens for Variety; but they have not much Beauty.

BISLINGUA. *See* Ruſcus.

BISTORTA. Biſtort, or Snakeweed.

There are three different Species of this Plant, which are found wild in *England*; but as they are ſeldom planted in Gardens, I ſhall paſs them over with only mentioning the common Sort which is uſed in Medicine.

Bistorta *major, radice minus intortâ. C. B.* The common great Biſtort, or Snakeweed.

This Genus is joined to the *Polygonum* by Dr. *Linnæus*, who titles it *Polygonum caule ſimpliciſſimo monoſtachyo foliis ovatis in petiolum decurrentibus. Mat. Med.* 188.

This Plant flowers in *May*, and if the Seaſon proves moiſt, will continue to produce new Spikes of Flowers till *Auguſt*: It may be propagated by planting the Roots in a moiſt ſhady Border, either in Spring or Autumn, which will ſoon furniſh the Garden with Plants, for it greatly increaſes by its creeping Roots.

The Roots of this Plant have been recommended for Tanning Leather, but the Trouble of procuring a ſufficient Quantity is too great to anſwer the Intention.

BIXA. *Lin. Gen. Plant.* 581. *Urucu. Sloan. Cat. Jam. Orleana. H. L. Mitilla. Tourn. Inſt.* 242. *Anotta*, by the *French*, *Roucou*.

The *Characters* are,

It hath a plain ſmall obtuſe Empalement, which is permanent; the Flower hath a double Series of Petals, the outer conſiſting of five, which are large, oblong, and equal, the inner of the ſame Number and Shape, but narrower. It hath a great Number of briſtly Stamina, which are but half the Length of the Petals, and terminated by erect Summits. In the Center is ſituated an oval Germen, ſupporting a ſlender Style of the ſame Length with the Stamina, and crowned by a bifid compreſſed parallel Stigma. The Germen afterward becomes an oval Heart ſhaped Capſule, a little compreſſed, covered with ſharp Briſtles, opening with two Valves, with one Cell, and filled with angular Seeds, adhering to a linear Receptacle, which runs longitudinally through the Capſule.

We have but one *Species* of this Genus, *viz.*

Bixa. *Hort. Cliff.* 211. The *Anotta*, or *Arnotta*. This is the *Mitella Americana maxima tinctoria*. The greateſt *American* dying *Mitella*, and the *Achioti* of *Hernandez*.

This Shrub grows naturally in the warm Parts of *America*, where it riſes with an upright Stem, to the Height of 8 or 10 Feet, ſending out many Branches at the Top, forming a regular Head. Theſe are garniſhed with Heart-ſhaped Leaves ending in a Point, which have long Foot Stalks, and come out without any Order. The Flowers are produced in looſe Panicles at the End of the Branches; theſe are of a pale Peach Colour, having large Petals, and a great Number of briſtly Stamina of the ſame Colour, in the Center. After the Flower is paſt, the Germen becomes a Heart-ſhaped, or rather a Mitre-ſhaped Seed Veſſel, covered on the Outſide with Briſtles, opening with two Valves, and filled with angular Seeds, covered with a red Pulp or Paſte, which colours the Hands of thoſe who touch it, and is collected for the Uſe of Dyers and Painters.

This Plant is propagated by Seeds, which are annually brought from the *Weſt-Indies*. Theſe ſhould be ſown in a ſmall Pot, filled with light rich Earth, and plunged into a hot Bed of Tanners Bark; where, if the Bed is of a proper Temperature of Heat, the Plants will appear in about a Month: When theſe are about an Inch high, they ſhould be ſhaken out of the Pot and carefully ſeparated, ſo as not to tear off their tender Roots, and each planted in a ſmall Pot filled with ſome rich light Earth, and plunged into a freſh hot Bed of Tanners Bark, obſerving to ſhade them every Day until they have taken new Root; after which they muſt be treated as other tender Plants from the ſame Country, by admitting freſh Air to them in Proportion to the Warmth of the Seaſon; and when the Heat of the Tan declines, it ſhould be turned up to the Bottom, and, if neceſſary, ſome freſh Tan added to renew the Heat. The Plants muſt be refreſhed three Times a Week with Water in Summer, but they muſt not have it in great Quantities, for their Roots often rot with much Wet. If the Plants are raiſed early in the Spring, and properly managed, they will be a Foot and a Half high by the Autumn, when they ſhould be removed into the Bark Stove, and plunged in the Tan Bed. During the Winter, they muſt have but little Water, and while the Plants are young, they muſt have a good Share of Warmth, otherwiſe they are very ſubject to caſt their Leaves, and frequently loſe their Tops, which renders them unſightly. They muſt be conſtantly kept in the Bark Stove, for thoſe Plants which have been placed in a dry Stove, have never made much Progreſs. I have had many of theſe Plants 7 or 8 Feet high, with ſtrong Stems and large Heads, but have only had one produce Flowers; nor have I heard of its flowering in any of the Gardens in *Europe*, for in the *Dutch* Gardens they have no Plants of any Size.

The Paſte which ſurrounds the Seeds is taken off by ſteeping the Seeds in hot Water, and with the Hands waſhed until the Seeds are clean, then after pouring away the Water, the Sediment is left to harden, which is made up in Balls, and ſent to *Europe*, where it is uſed in dying and painting. It is alſo uſed by the *Americans* to dye their Chocolate, and the Natives uſed to paint their Bodies with it when they went to the Wars.

BLADDER NUT. *See* Staphylea.

BLATTARIA. *See* Verbaſcum.

BLIGHTS.

There is nothing ſo deſtructive to a Fruit Garden as Blights; nor is there any Thing in the Buſineſs of Gardening which requires more of our ſerious Attention, than the endeavouring to prevent or guard againſt this great Enemy of Gardens.

In order to remedy this Evil, it will be neceſſary firſt to examine the true Cauſes of Blights, ſo far as we have been enabled to judge from repeated Obſervations and Experiments.

1. Blights are often cauſed by a continued dry Eaſterly Wind for ſeveral Days together, without the Intervention of Showers, or any Morning Dew, by which the Perſpiration in the tender Bloſſoms is ſtopped, ſo that in a ſhort Time their Colour is changed, and they wither and decay; and if it ſo happen, that there is a long Continuance of the ſame Weather, it equally affects the tender Leaves; for their perſpiring Matter is hereby thickened and rendered glutinous, cloſely adhering to the ſurface of the Leaves, and becomes a proper Nutriment to thoſe ſmall Inſects, which are always found preying upon the Leaves and tender Branches of Fruit Trees whenever this Blight happens; but it is not theſe Inſects which are the firſt Cauſe of Blights, as hath been imagined by ſome; though it muſt be allowed, that whenever theſe Inſects meet with ſuch a proper Food, they multiply exceedingly, and are inſtrumental in promoting the Diſtemper; ſo that many times, when the Seaſon proves favourable to them, and no proper Care hath been taken to prevent their Miſchief, it is ſurpriſing to think how whole Walls of Trees have ſuffered by this Infection.

The beſt Remedy for this Diſtemper, that I have yet known ſucceed, is, gently to waſh and ſprinkle over the Trees, from time to time, with common Water (that is, ſuch as hath not had any Thing ſteeped in it); and the ſooner this is performed (whenever we apprehend Danger), the better; and if the young and tender Shoots ſeem to be much infected, waſh them with a woollen Cloth, ſo as to clear them, if poſſible, from all this glutinous Matter, that their Reſpiration and Perſpiration may not be obſtructed; and if we place ſome broad flat Pans or Tubs of Water near the Trees, that the Vapours exhaled from it may be received by the Trees, it will keep their tender Parts in a ductile State, and greatly help them; but whenever this Operation of waſhing the Trees is performed, it ſhould be early in the Day, that the Moiſture may be exhaled before the Cold of the Night comes on; eſpecially if the Nights are froſty: nor ſhould it be done when the Sun ſhines very hot upon the Wall, which would be ſubject to ſcorch up the tender Bloſſoms.

Another Cauſe of Blights in the Spring is, ſharp hoary Froſts, which are often ſucceeded by hot Sunſhine in the Day Time; which is the moſt ſudden and certain Deſtroyer of Fruits that is known; for the Cold of the Night ſtarves the tender Parts of the Bloſſoms, and the Sun riſing hot upon the Walls before the Moiſture is dried from the Bloſſoms (which, being in ſmall Globules, collects the Rays of the Sun), a ſcalding Heat is thereby acquired; which ſcorches the tender Flowers, and other Parts of Plants.

But that Blights are frequently no more than an inward Weakneſs or Diſtemper in Trees, will evidently appear, if we conſider how often it happens, that Trees againſt the ſame Wall, expoſed to the ſame Aſpect, and equally enjoying the Advantages of Sun and Air, with every other Circumſtance which might render them equally healthy, yet very often are obſerved to differ greatly in their Strength and Vigour; and as often we obſerve the weak Trees to be continually blighted, when the vigorous ones, in the ſame Situation, ſhall eſcape very well; which muſt, therefore, in a great Meaſure, be aſcribed to their healthy Conſtitution. This Weakneſs, therefore, in Trees, muſt proceed either from a want of a ſufficient Supply of Nouriſhment to maintain them in perfect Vigour, or from ſome ill Qualities in the Soil where they grow, or, perhaps, from ſome bad Quality in the Stock, or inbred Diſtemper of the Buds or Cyons, which they had imbibed from their Mother Tree, or from Miſmanagement in the Pruning, *&c.* all which are productive of Diſtempers in Trees, and of which they are with Difficulty cured. Now, if this is occaſioned by a Weakneſs in the Tree, we ſhould endeavour to trace out the true Cauſe; firſt, whether it has been occaſioned by ill Management in the pruning; which is too often the Caſe; for how common is it to obſerve Peach Trees trained up to the full Length of their Branches every Year, ſo as to be carried to the Top of the Wall in a few Years after planting, when at the ſame Time the Shoots have been ſo weak, as ſcarcely to have Strength to produce their Flowers: But this being the utmoſt of their Vigour, the Bloſſoms fall off, and, many times, the Branches decay, either the greateſt Part of their Length, or quite down to the Place where they were produced; and this, whenever it happens to be the Caſe, is aſcribed to a Blight.

Others there are, who ſuffer their Trees to grow juſt as they are naturally diſpoſed, during the Summer Seaſon, without ſtoping of Shoots, or diſburdening their Trees of luxuriant Branches; by which Means two, three, or four Shoots ſhall exhauſt the greateſt Part of the Nouriſhment of the Trees all the Summer; which Shoots, at the Winter pruning, are entirely cut out; ſo that the Strength of the Tree was employed only in nouriſhing uſeleſs Branches, while the Fruit Branches are thereby rendered ſo weak, as not to be able to preſerve themſelves. The Remedies to this Evil ſhall be explained in the Article of pruning Peach Trees, *&c.*

But if the Weakneſs of the Tree proceeds from an inbred Diſtemper, it is the better way to remove the Tree at firſt; and after renewing your Earth, plant a new one in its Place.

But there is another Sort of Blight, againſt which it is very difficult to guard our Fruit Trees; this is ſharp pinching froſty Mornings, which often happen at the Time when the Trees are in Flower, or while the Fruit is very young, and occaſion the Bloſſoms or Fruit to drop off; and, ſometimes, the tender Parts of the Shoots and Leaves are greatly injured thereby.

The only Method yet found out to prevent this Miſchief, is, by carefully covering the Walls, either with Mats, Canvas, Reeds, *&c.* which being faſtened ſo as not to be diſturbed with the Wind, and ſuffered to remain on during the Night, and taking them off every Day, if the Weather permits, is the beſt and ſureſt Method that hath yet been found ſucceſsful; which altho' it has been ſlighted, and thought of little Service by ſome, yet the Reaſon of their being not ſo ſerviceable as has been expected, was, becauſe they have not been rightly uſed, either by ſuffering the Trees to remain too long covered; by which Means, the younger Branches and Leaves have been rendered too weak to endure the open Air, when they are expoſed to it; which has often proved of worſe Conſequence to Trees, than if they had remained entirely uncovered, or by incautiouſly expoſing them to the Air, after having been long covered.

Whereas, when the Covering before-mentioned has been performed as it ought to be, it has proved very ſerviceable to Fruits; and many times, when there has been almoſt a general Deſtruction of Fruits in the neighbouring Gardens, there has been Plenty of them in ſuch Places where they have been properly covered: And though the trouble may ſeem to ſome very great, yet, if theſe Coverings are fixed near the upper Part of the Wall, and are faſtened to Pullies, ſo as to be drawn up, or let down, it will be ſoon and eaſily performed; and the Succeſs will ſufficiently repay the Trouble.

BLITUM. *Lin. Gen. Plant.* 14. *Chenopodio-morus Boerh. Ind. Morocarpus Rupp.* Strawberry Blite.

The *Characters* are,

It hath a tripartite ſpreading Empalement, which is permanent; the Flower hath no Petals, but one briſtly Stamina the Length of the Empalement, with a double Summit; in the Center is ſituated an oval pointed Germen ſupporting two Styles, the Length of the Stamina, with a ſingle Stigma. The Empalement becomes an oval compreſſed Capſule, including one globular compreſſed Seed, the Size of the Capſule.

The *Species* are,

1. BLITUM *capitellis ſpicatis terminalibus. Hort. Upſal.* Blite with Spikes terminated by little Heads. This is the *Chenopodio-morus major. Boerh.* And the *Atriplex baccifera. Raii Hiſt.* 197. Berry bearing *Atriplex*, commonly called Strawberry Blite, or Strawberry Spinach.

2. BLITUM *capitellis ſparſis lateralibus. Hort. Upſal.* 3. Blite with ſmall Heads growing ſcatteringly from the Sides of the Stalks. This is the *Chenopodio-morus minor. Boerh. Ind. alt.* 2. 91. And the *Atriplex Sylveſtris mori fructu. C. B. P.* Wild *Atriplex* with a Mulberry Fruit.

3. BLITUM *foliis triangularibus acute dentatis, capitellis ſimplicibus lateralibus.* Blite with triangular Leaves, ſharply indented, and ſingle Heads, proceeding from the Sides of the Stalks. *Blitum fragiferum, maximum polyſpermum. Amman.* Greateſt many ſeeded Strawberry Blite.

The 1ſt Sort grows naturally in *Spain* and *Portugal*, but hath been long preſerved in the *Engliſh* Gardens. This is an annual Plant which hath Leaves ſomewhat like thoſe of Spinach; the Stalk riſes about a Foot and half high, the lower Part of which is garniſhed with Leaves of the Shape with thoſe at Bottom, but ſmaller, the upper Part of the Stalk hath Flowers coming out in ſmall Heads, at every Joint, and is terminated by a ſmall Cluſter of the ſame: After the Flowers are paſt, the little Heads ſwell to the Size of Wood Strawberries, and when ripe have the ſame Appearance, being very ſucculent, and full of a purple Juice, which ſtains the Hands of thoſe who bruiſe them of a deep purple Colour.

The 2d Sort grows naturally in the South of *France* and *Italy*. This ſeldom grows more than a Foot high, with ſmaller Leaves than the firſt, but of the ſame Shape; the Flowers are produced at the Wings of the Leaves, almoſt the Length of the Stalk, which are ſmall, and collected in little Heads, ſhaped like thoſe of the firſt, but ſmaller and not ſo deeply coloured.

The Seeds of the 3d Sort were ſent me by the late Dr. *Amman*, Profeſſor of Botany at *Peterſburgh*, who had them from *Tartary*, where it grows naturally. This riſes near 3 Feet high; the Leaves are triangular, ending in very acute Points, as do alſo the Indentures on the Edges of the Leaves. The Flowers come out from the Wings of the Leaves, in ſmall Heads, which are ſucceeded by Berries of the ſame Shape and Colour as thoſe of the 1ſt, but are ſmaller. This Sort differs from the 1ſt in the Shape and Indentures of the Leaves, and in having Leaves placed between the Berries, the whole Length of the Stalk, which is not terminated by Heads, as the 1ſt, but hath Leaves above the Heads.

Theſe are all of them annual Plants, which will drop their Seeds if permitted, and the Plants will come up in Plenty the following Spring: Or if the Seeds of either of the Sorts are ſown in *March* or *April*, upon a Bed of common Earth, in an open Situation, the Plants will come up in a Month or five Weeks after; and, if they are to remain in the Place where they are ſown, will require no other Care but to keep them clear from Weeds, and to thin them out, ſo as to leave them 6 or 8 Inches apart: In *July* the Plants will begin to ſhew their Berries, when they make a pretty Appearance: Many People tranſplant theſe into the Borders of their Flower Gardens; and others plant them in Pots, to adorn Court Yards, or to place upon low Walls, among other annual Flowers.

When theſe Plants are to be removed, they ſhould be tranſplanted before they ſhoot up their Flower Stems; for they will not bear tranſplanting well afterward: And if they are planted in Pots, they will require to be duly watered in dry Weather, otherwiſe the Plants will ſtint, and not grow to any Size: And, as the Flower Stems advance, they ſhould be ſupported by Sticks; for if they are not, the Branches will fall to the Ground, when the Berries are grown pretty large and weighty.

BLOODWORT. *See* Lapathum.

BOCCONIA.

So called after the Reverend *Paul Boccone*, of *Sicily*, who has publiſhed ſome curious Books of Botany.

The *Characters* are,

The Flower hath an Empalement, compoſed of two oval obtuſe concave Leaves, and hath four narrow Petals, with a great Number of very ſhort Stamina, crowned by erect Summits, the Length of the Empalement. In the Center is ſituated a roundiſh Germen, contracted at both Ends, ſupporting a ſingle Style, which is bifid at the Top, and crowned by a ſingle Stigma. The Germen becomes an oval Fruit, contracted at both Ends, and a little compreſſed, having one Cell, full of Pulp, including a ſingle round Seed.

We know but one Species of this Genus, which is,

BOCCONIA. *Lin. Sp. Plant.* 505. This is the *Bocconia racemoſa, ſphondylii folio tomentoſo. Plum. Nov. Gen.* Branching *Bocconia*, with a woolly Cow Parſnep Leaf.

This is called, by Sir *Hans Sloane*, in his Natural Hiſtory of *Jamaica*, *Chelidonium majus arboreum, foliis quercinis*: Greater Tree Celandine, with Oak Leaves.

It is very common in *Jamaica*, and ſeveral other Parts of *America*, where it grows to the Height of 10 or 12 Feet; having a ſtrait Trunk, as large as a Man's Arm, which is covered with a white ſmooth Bark. At the Top it divides into ſeveral Branches, on which the Leaves are placed alternately. Theſe Leaves are 8 or 9 Inches long, and 5 or 6 broad; are deeply ſinuated, ſometimes almoſt to the Mid-rib, and are of a fine glaucous Colour; ſo that this Plant makes a beautiful Variety among other exotick Plants in the Stove. The whole Plant abounds with a yellow Juice, like the greater Celandine; which is of an acrid Nature; ſo that it is uſed by the Inhabitants of *America*, to take off Warts, and Spots from the Eyes.

It is propagated by Seeds, which ſhould be ſown in a Pot filled with light freſh Earth, early in the Spring, and plunged into a hot Bed of Tanners Bark; obſerving to water it now and then gently, otherwiſe the Seeds will not grow. When the Plants are come up, they ſhould be each tranſplanted into ſeparate ſmall Pots filled with light ſandy Earth, and plunged into the hot Bed again; obſerving to ſhade the Glaſſes in the Heat of the Day, until the Plants have taken Root. You muſt alſo refreſh them gently with Water; but it ſhould be done ſparingly while they are young; for their Stems, being very tender, and full of Juice, will rot, if they receive too much Moiſture; but after their Stems are become woody, they will require it often, eſpecially in hot Weather; when they ſhould have a large Share of Air, by raiſing the Glaſſes of the hot Bed. The Plants, in two Months after tranſplanting, will have filled theſe ſmall Pots with their Roots; therefore they ſhould be ſhaken out of them, and planted into Pots one Size larger filled with light freſh Earth, and plunged into the Bark Stove, where they ſhould have a good Share of freſh Air in warm Weather. With this Management, I have raiſed theſe Plants upward of 2 Feet high in one Seaſon, with very ſtrong Stems. Theſe Plants muſt be conſtantly kept in the Stove, being too tender to thrive in the Green Houſe. This Plant has flowered in the Phyſick Garden at *Chelſea*, and perfected Seeds; but if it were not to flower, the ſingular Beauty of the Plant renders it worthy of a Place in every curious Collection of Plants: *Hernandez* tells us, the *Indian* Kings planted it in their Gardens.

BOERHAAVIA. This Genus was ſo named by Monſ. *Vaillant*, Profeſſor of Botany at *Paris*, in Honour of the famous Dr. *Boerhaave*, who was Profeſſor of Botany, Chemiſtry, and Phyſick, in the Univerſity of *Leyden*.

The Inhabitants of the *Weſt-Indies*, where theſe Plants are Natives, give them the Name of Hogweed; and aſcribe to them many excellent Virtues.

The *Characters* are,

The Flower hath no Empalement, and but one Bell-ſhaped Petal, which is pentangular and entire. It hath in ſome Species one, and in others two ſhort Stamina, crowned by a double globular Summit. The Germen is ſituated below the Receptacle, ſupporting a ſhort ſlender Style, with a Kidney-ſhaped Stigma; the Germen becomes a ſingle oblong Seed.

The *Species* are,

1. BOERHAAVIA *caule erecto. Lin. Sp. Plant.* 3. *Boerhaavia* with an erect Stalk. This is the *Boerhaavia Solanifolia erecta glabra, floribus carneis laxius diſpoſitis. Houſt. Mſſ.* Smooth upright *Boerhaavia*, with a Nightſhade Leaf, and Fleſh-coloured Flowers diſpoſed in looſe Spikes.

2. BOERHAAVIA *caule diffuſo. Lin. Sp. Plant.* *Boerhaavia* with a diffuſed Stalk. *Boerhaavia Solanifolia major. Vail.* Greater *Boerhaavia* with a Nightſhade Leaf.

3. BOERHAAVIA *caule ſcandente. Lin. Sp. Plant.* 3. *Boerhaavia* with a climbing Stalk. *Boerhaavia Alſines folio ſcandens, floribus pallide luteis majoribus in umbellæ modum diſpoſitis ſemine aſpero. Houſt. Mſſ.* Climbing *Boerhaavia* with a Chickweed Leaf, large, pale, yellow Flowers, diſpoſed in form of an Umbel, and a rough Seed.

4. BOERHAAVIA *foliis ovatis, floribus lateralibus compactis, caule hirſuto procumbente. Boerhaavia* with oval Leaves, Flowers coming from the Wings of the Leaves in cloſe Heads, and a hairy trailing Stalk. *Boerhaavia Solanifolia procumbens & hirſuta floribus coccineis compactis. Houſt.* Trailing *Boerhaavia* with hairy Stalks, a Nightſhade Leaf, and ſcarlet Flowers growing cloſe.

The 1ſt Sort was diſcovered by the late Dr. *Houſton*, at *La Vera Cruz*, in 1731, from whence he ſent the Seeds to *England*, which ſucceeded in the Garden at *Chelſea*. This riſes with an upright ſmooth Stalk, 2 Feet high, and each Joint hath two oval pointed Leaves growing oppoſite, upon Foot Stalks, an Inch long, of a whitiſh Colour on their under Side. At the Joints, which are far aſunder, come out ſmall Side Branches, growing erect; theſe, alſo the large Stalk, are terminated by looſe, Panicles of Fleſh-coloured Flowers, each ſucceeded by oblong glutinous Seeds.

The Seeds of the 2d Sort were ſent me by the ſame Gentleman from *Jamaica*, where it grows naturally. This ſends out many diffuſed Stalks, a Foot and a half long, which are garniſhed with ſmall roundiſh Leaves at each Joint. The Flowers grow very ſcatteringly upon long branching Foot Stalks from the Wings of the Leaves, alſo at the End of the Branches, of a pale red Colour, and are ſucceeded by Seeds like the former.

The 3d Sort was ſent me with the former. This ſends out ſeveral Stalks from the Root, which divide into many Branches, and trail over whatever Plants grow near them, and riſe to the Height of 5 or 6 Feet; and are garniſhed with Heart-ſhaped Leaves, growing by Pairs oppoſite at each Joint upon long Foot Stalks, which are of the Colour and Conſiſtence of thoſe of the greater Chickweed. The Flowers grow in looſe Umbels at the Extremity of the Branches, they are yellow, and ſucceeded by ſmall oblong viſcous Seeds.

The 4th Sort was ſent me with the two former; this ſends out many trailing hairy Stalks, which divide into ſmaller Branches, garniſhed with oval Leaves at every Joint; and at the Wings of the Leaves come out the naked Foot Stalks, ſuſtaining a ſmall cloſe Head of ſcarlet Flowers, which are very fugaceous, ſeldom ſtanding more than half a Day before their Petals drop; theſe are ſucceeded by ſhort oblong Seeds.

The 1ſt, 2d, and 4th Sorts are annual Plants, which decay in Autumn, but the 3d Sort is perennial. They are all tender, ſo will not thrive in the open Air in *England*; they are propagated by Seeds, ſown on a hot Bed in Spring; and when the Plants are fit to remove, they ſhould be each planted in a ſmall Pot and plunged into the hot Bed, and treated as other tender Exoticks. When they are grown too tall to remain under the common Frame, a Plant or two of each Sort ſhould be placed in the Stove, the other may be turned out of the Pots, and planted in a warm Border, where, if the Seaſon proves warm, they will perfect their Seeds, but as theſe are ſubject to fail in cold Seaſons, thoſe in the Stove will always ripen their Seeds in Autumn; the 3d Sort may be preſerved in a warm Stove two or three Years.

BOMBAX. *Lin. Gen. Plant.* 580. *Ceiba. Plum. Nov. Gen.* 32. Silk Cotton Tree.

The *Characters* are,

It hath a permanent Empalement of one Leaf, Bell-ſhaped, erect, and quinquefid. The Flower is quinquefid and ſpreading, the Segments are oval and concave. It hath many Awl-ſhaped Stamina, the Length of the Petal, crowned with oblong incurved Summits; in the Center is ſituated the round Germen, ſupporting a ſlender Style the Length of the Stamina, with a round Stigma. The Empalement afterward becomes a large oblong turbinated Capſule, having five Cells, opening with five Valves, which are ligneous, containing many roundiſh Seeds, wrapped in a ſoft Down, and fixed to a five cornered Column.

The *Species* are,

1. Bombax *foliis digitatis caule aculeato. Lin. Sp. Plant.* 511. Silk Cotton with fingered Leaves, and a prickly Stalk.

2. Bombax *foliis digitatis caule inermi. Lin. Sp. Plant.* Silk Cotton with fingered Leaves, and a ſmooth Stalk.

3. Bombax *foliis quinque-angularibus villoſis, caule geniculato herbaceo.* Silk Cotton with five-cornered hairy Leaves, and a jointed herbaceous Stalk.

The 1ſt and 2d Sorts grow naturally in both *Indies*, where they arrive to a great Magnitude, being ſome of the talleſt Trees in thoſe Countries; but the Wood is very light, and not much valued, except for making Canoes, which is the chief Uſe made of it. Their Trunks are ſo large, as when hollowed, to make very large ones. In *Columbus*'s firſt Voyage it is reported, there was a Canoe ſeen at the Iſland of *Cuba*, made of the hollowed Trunk of one of theſe Trees, which was 95 Palms long, and of a proportional Width, which would contain 150 Men. Some modern Writers have affirmed, that there are Trees of theſe Sorts, now growing in the *Weſt-Indies*, ſo large, as not to be fathomed by 16 Men, and ſo tall as that an Arrow cannot be ſhot to their Top.

Theſe Trees generally grow with very ſtrait Stems; thoſe of the 1ſt Sort are cloſely armed with ſhort ſtrong Spines; but the 2d hath very ſmooth Stems, which in the young Plants are of a bright green, but after a few Years, they are covered with a grey, or aſh-coloured Bark, which turns to a brown as the Trees grow older. They ſeldom put out any Side Branches till they arrive to a conſiderable Height, unleſs their leading Shoot is broken or injured. The Branches toward their Top are garniſhed with Leaves compoſed of five, ſeven, or nine oblong ſmooth little Leaves, which are Spear-ſhaped, and join to one Center at their Baſe, where they adhere to the long Foot Stalk. Theſe fall away every Year, ſo that for ſome Time the Trees are naked, and, before the new Leaves come out, the Flower Buds appear at the End of the Branches, and ſoon after the Flowers expand, which are compoſed of five oblong purple Petals, with a great Number of Stamina in the Center; when theſe fall off, they are ſucceeded by oval Fruit, as large as a Swan's Egg, having a thick ligneous Cover, which, when ripe, opens in five Parts, and is full of a dark ſhort Cotton, incloſing many roundiſh Seeds, as large as ſmall Peaſe.

The Down which is incloſed in theſe Seed-Veſſels is ſeldom uſed, except by the poorer Inhabitants to ſtuff Pillows, or Chairs, but it is generally thought to be unwholeſome to lie upon.

There was a few Years paſt, a fine Plant of another Sort in the Garden of the late Duke of *Richmond*, at *Goodwood*, which was raiſed from Seeds which came from the *Eaſt-Indies*. The Stem of this was very ſtrait and ſmooth; the Leaves were produced round the Top, upon very long Foot Stalks, each being compoſed of ſeven or nine long, narrow, ſilky, ſmall Leaves, joined at their Baſe to the Foot Stalk, in the ſame Manner as thoſe of the two former, but they were much longer, and reflexed backward, ſo that at firſt Sight it appeared very different from either of them.

The 3d Sort was ſent me from the *Spaniſh Weſt-Indies*, where it grows naturally; the Plants which have been raiſed here, have ſoft herbaceous Stalks very full of Joints, and do not appear as if they would become woody, for the Plants of ſeveral Years Growth have ſoft pithy Stems. The Leaves come out on long hairy Foot Stalks at the Top of the Plants; theſe have the Appearance of thoſe of the Mallow Tree, but are larger, and of a thicker Conſiſtence, and on their under Side are covered with a ſhort, brown, hairy Down, and are cut on their Edges into five Angles. Theſe Plants have not as yet flowered in *England*, nor have I received any Information what Flowers they produce, but by the Pods and Seeds, it appears evidently to be of this Genus. The Down incloſed in theſe Pods is of a fine purple Colour, and I have been informed that the Inhabitants of the Countries where the Trees grow naturally, ſpin and work it into Garments, which they wear without dying any other Colour.

I received a few Years ſince, a few Pods of another Sort from *Panama*, which were not ſo large as thoſe of the common, but were rounder. The Down of theſe was red, but the Plants raiſed from the Seeds were ſo like thoſe of the 3d Sort, as not to be diſtinguiſhed from them, ſo I doubt of their being diſtinct Species. I alſo received ſome Seeds from *Siam*, which produced Plants of the ſame Kind, ſo that theſe Trees may be common to many of the hot Countries.

The Plants are propagated by Seeds, which muſt be ſown on a hot Bed in Spring; if the Seeds are good, the Plants will appear in a Month, and thoſe of the two 1ſt Sorts will be ſtrong enough to tranſplant in a Month after; when they ſhould be each planted in a ſmall Pot, filled with freſh loamy Earth, and plunged into a moderate hot Bed of Tanners Bark, being careful to ſhade them from the Sun, till they have taken freſh Root, after which they ſhould have a large Share of Air admitted to them when the Weather is warm, to prevent their being drawn up weak; they muſt alſo be frequently refreſhed with Water, which muſt not be given in large Quantities, eſpecially the 3d Sort, whoſe Stalks are very ſubject to rot with much Moiſture. In this Bed they may remain till Autumn (provided there is room for the Plants under the Glaſſes) but if the Heat of the Bed declines, the Tan ſhould be ſtirred up, and freſh added to it, and if the Plants have filled the Pots with their Roots, they ſhould be ſhifted into Pots a little larger; but there muſt be care taken not to over-pot them, for nothing is more injurious to theſe Plants, than to be put into large Pots, in which they will never thrive. In Autumn they muſt be removed into the Bark Stove, where they muſt conſtantly remain, being too tender to thrive in this Country, in any other Situation. In Winter they muſt have but little Wet, eſpecially if they caſt their Leaves; but in the Summer they ſhould be frequently refreſhed with Water, and in warm Weather muſt have Plenty of freſh Air admitted to them. With this Management the Plants will make great Progreſs, and in a few Years will reach the Glaſſes on the Top of the Stove, if the Building is not very lofty.

Theſe Plants make an agreeable Variety in a large Stove where they have Room to grow, their Leaves having a different Appearance from moſt other Plants; but as they are ſeveral Years old before they flower, in the Countries where they grow naturally; ſo there is little Hopes of their producing any in *England*.

BONDUC. *See* Guilandina.

BONTIA. *Lin. G. P.* 709. *Barbadoes* Wild Olive.

The *Characters* are,

The Flower hath a ſmall erect Empalement, which is quinquefid and permanent. The Flower is of the ringent Kind, having a long cylindrical Tube, gaping at the Brim, the upper Lip is erect and indented, the lower Lip trifid and turns backward. It hath four Awl-ſhaped Stamina, as long as the Petal, and incline to the upper Lip, two of them being longer than the other, and have ſingle Summits. In the Center is ſituated the oval Germen, ſupporting a ſlender Style the length of the Stamina, and crowned by a bifid obtuſe Stigma. The Germen afterward becomes an oval Berry with one Cell including a Nut of the ſame Form.

We have but one Species of this Genus, *viz.*

BONTIA. *Lin. Sp. Plant. Barbadoes* Wild Olive. This is the *Bontia arboreſcens thymelææ facie Plum. Nov. Gen.* 32. Tree-like Bontia reſembling Spurge Laurel.

This Plant is greatly cultivated in the Gardens at *Barbadoes*, for making Hedges; than which there is not a more proper Plant to thrive in thoſe hot Countries, it being an Ever-green, and of quick Growth. I have been informed, that from Cuttings (planted in the rainy Seaſon, when they have immediately taken Root) there has been a complete Hedge, 4 or 5 Feet high, in 18 Months. And as this will very well bear cutting, it is formed into a very cloſe thick Hedge, which makes a beautiful Appearance. In *England* it is preſerved in Stoves, with ſeveral curious Plants of the ſame Country. It may be raiſed from Seeds, ſown on a hot Bed early in the Spring, that the Plants may acquire Strength before Winter, when the Plants come up, they muſt be tranſplanted each into a half-penny Pot filled with light freſh Earth, and plunged into a moderate hot Bed of Tanners Bark; obſerving to water and ſhade them until they have taken Root; after which, they muſt have a large Share of Air in warm Weather, and be often refreſhed with Water. In Winter they muſt be placed in the Stove, where they ſhould have a moderate Degree of Warmth, and but little Water during that Seaſon, leſt it rot their tender Roots. In Summer they muſt have a great Share of Air; but will not do well if expoſed abroad; ſo ſhould always remain in the Stove, among Plants which require a great Share of Air; which may be admitted by opening the Glaſſes in very hot Weather. With this Management, theſe Plants will produce Flowers and Fruit, in two or three Years, from Seed. They may alſo be propagated by Cuttings; planted in the Spring, before the Plants have begun to ſhoot. Theſe muſt be put into Pots filled with light rich Earth, and plunged into a moderate hot Bed; obſerving to water and ſhade them until they have taken Root; after which they muſt be treated as the ſeedling Plants. Theſe Plants being ever-green, and growing in a pyramidal Form, make a pretty Variety in the Stove.

BONUS HENRICUS. *See* Chenopodium.

BORBONIA. *Lin. Gen. Plant.* 764.

The *Characters* are,

It hath a turbinated Empalement of one Leaf, cut at the Top into five acute Segments, which are ſtiff, pungent, and about half the Length of the Petals. The Flower hath five Leaves, and is of the Butterfly Shape. The Standard is obtuſe and reflexed. The Wings are Heart-ſhaped and ſhorter than the Standard: The Keel hath two obtuſe lunulated Leaves. It hath nine Stamina joined in a Cylinder, *and one upper ſtanding ſingle turning up its Point. Theſe have ſmall Summits; in the Center is ſituated an Awl-ſhaped Germen, ſupporting a ſhort Style crowned by an obtuſe indented Stigma. The Germen becomes a round pointed Pod terminated with a Spine, having one Cell incloſing a Kidney-ſhaped Seed.*

The *Species* are,

1. BORBONIA *foliis lanceolatis multinerviis integerrimis. Lin. Sp. Plant.* 707. *Borbonia* with entire Spear-ſhaped Leaves having many Nerves. This is the *Geniſta Africana fruteſcens ruſci nervoſis foliis. Raii Hiſt.* 3. 107. Shrubby *African* Broom, with nervous Butchers Broom Leaves.

2. BORBONIA *foliis cordatis multinerviis integerrimis Lin. Sp. Plant.* 707. *Borbonia* with entire Heart-ſhaped Leaves having many Nerves. *Spartium Africanum.* Shrubby *African* Broom, with a Butchers Broom Leaf embracing the Stalk.

3. BORBONIA *foliis lanceolatis trinerviis integerrimis. Lin. Sp. Plant.* 707. *Borbonia* with entire Spear-ſhaped Leaves, having three Veins.

Theſe Plants grow naturally at the *Cape of Good-Hope*, from whence I received their Seeds. In the natural Place of their Growth, they riſe to the Height of 10 or 12 Feet; but in *Europe*, they ſeldom are more than 4 or 5; having ſlender Stems dividing into ſeveral Branches, which are garniſhed with ſtiff Leaves, placed alternately; thoſe of the 1ſt Sort are narrow, long, and end in a ſharp Point. The Flowers come out from between the Leaves at the End of the Branches, in ſmall Cluſters; theſe are yellow, and ſhaped like thoſe of the Broom. It flowers in *Auguſt* and *September*, but doth not perfect Seeds in *England*. The 2d Sort hath broader Leaves, the Stalks are ſlender and covered with white Bark; the Leaves embrace theſe at their Baſe, where they are broadeſt, and are terminated by ſharp Points like thoſe of *Knecholm* or *Butchers Broom*. The Flowers are produced in ſmall Cluſters at the End of the Branches, of the ſame Shape and Colour as the former, but larger. This flowers at the ſame Time with the former, but never produces Seeds here.

The 3d Sort hath ſtronger Stalks than either of the former. Theſe are garniſhed almoſt their whole Length, as are alſo the Branches with ſtiff Spear-ſhaped Leaves, having three longitudinal Nerves in each; theſe are placed cloſer together, than thoſe of the other Species. The Flowers are produced at the Extremity of the Branches, each ſtanding on a ſeparate Foot Stalk. They are of the ſame Shape and Colour with the former, but are larger.

As theſe Plants do not perfect Seeds in this Country, they are with Difficulty propagated here. The only Method by which I have yet ſucceeded, hath been by laying down their young Shoots; but theſe are commonly two Years laid before they put out Roots fit to be ſeparated from the old Plant. In laying theſe down, the Joint which is laid in the Ground ſhould be ſlit upward, as is practiſed in laying *Carnations*, and the Bark of the Tongue at Bottom taken off. The beſt Time to lay theſe down is in the Beginning of *September*, and the Shoots moſt proper for this Purpoſe, are thoſe which come out immediately from the Root, and of the ſame Year's Growth, not only from their Situation being near the Ground, but theſe are alſo more apt to put out Roots, than any of the upper branches.

But where good Seeds can be procured, that is the more eligible Method of propagating the Plants; for thoſe raiſed from Seeds make the ſtraiteſt Plants, and are quicker of Growth. When good Seeds are obtained they ſhould be ſown in Pots filled with light loamy Earth, as ſoon as they are received; which if it happens in the Autumn, the Pots ſhould be plunged into an old Bed of Tanners Bark, under a Frame, where they may remain all the Winter, being careful that they have not much Wet; in Spring the Pots ſhould be plunged into a hot Bed, which will bring up the Plants in five or ſix Weeks. When theſe are fit to remove, they ſhould be each planted in a ſmall Pot, filled with the like loamy Earth, and plunged into a moderate hot Bed, obſerving to ſhade them until they have taken freſh Root, alſo to refreſh them with Water, as they may require it. After this they muſt by Degrees be inured to the open Air, into which they muſt be removed in *June*, and placed in a ſheltered Situation; where they may remain till Autumn, when they muſt be removed into the Green-houſe, and placed where they may enjoy the Air and Sun; during the Winter Seaſon, theſe Plants muſt be ſparingly watered; but in Summer, when they are placed abroad, they require to be frequently refreſhed, but muſt not have too much Water at a Time.

Theſe Plants make a pretty Variety in the Green-houſe in Winter, and as they do not require any artificial Heat, they are worthy of a Place in every Garden where there is conveniency for keeping them.

BORRAGO Borage.

The *Characters* are,

The Empalement is divided into five Parts at the Top, and is permanent. The Flower is of one Leaf, having a ſhort Tube, and ſpread wide open above, being divided into five acute Segments at the Brim. The Chaps of the Flower are crowned by five Prominences, which are obtuſe and indented. It hath five Stamina joined together, crowned by oblong Summits. It hath four Germen ſituated in the Center, and a ſingle Style longer than the Stamina ſupporting a ſingle Stigma. The four Germen become ſo many roundiſh rough Seeds, inſerted in the Cavities of the Receptacle and included in the large ſwollen Empalement.

The *Species* are,

1. BORRAGO *foliis omnibus alternis, calycibus patentibus Hort. Upſal.* 34. Borage with all the Leaves growing alternate, and a ſpreading Flower Cup. This is the *Borrago floribus cæruleis. I. B.* Borage with blue Flowers.

2. BORRAGO *calycibus tubo corollæ brevioribus, foliis cordatis Hort. Cliff.* 45. Borage with a Flower Cup, ſhorter than the Tube of the Flower, and Heart-ſhaped Leaves. *Borrago Conſtantinopolitana flore reflexo cæruleo, calyce veſicareo. Tourn.* Borage of *Conſtantinople* with a blue reflexed Flower, and a ſwelling Flower Cup.

3. BORRAGO *calcynis foliolis ovatis acutis erectis Hort. Cliff.* 45. Borage with the Leaves of the Empalement oval, pointed and erect. This is the *Cynogloſſum Boraginis folio & facie Æthiopicum. Pluk. Alm.* Ethiopian Hounds Tongue with a Leaf and Appearance of Borage.

4. BORRAGO *foliis ramificationum oppoſitis calycinis foliolis ſagittatis. Lin. Sp. Plant.* 137. Borage with oppoſite Leaves on the Branches, and Spear-ſhaped Leaves

to the Flower Cup. This is the *Cynogloſſoides folio caulem amplexante. Iſnard. Act. Scien.* 1718. Baſtard Hounds Tongue, with a Leaf embracing the Stalk.

The 1ſt is the common Borage, whoſe Flowers are uſed in Medicine, and the Herb for cool Tankards in Summer. Of this, there are three Varieties which generally retain their Difference from Seeds, one hath a white, another a red Flower, and the third variegated Leaves. Theſe three Variations have continued ſeveral Years in the *Chelſea* Garden, with little Alteration, but as they do not differ in any other Reſpect from the common, I have only mentioned them as Varieties.

This is an annual Plant, which if permitted to ſcatter its Seeds, the Plants will come up in Plenty, but the Seeds may be ſown either in Spring or Autumn, on a Spot of open Ground where the Plants are deſigned to remain; when they have obtained a little Strength, the Ground ſhould be hoed, to deſtroy the Weeds, and the Plants muſt be cut up where they are too near each other, leaving them ſix or eight Inches aſunder. After this they will require no farther Care, unleſs the Weeds ſhould come up again, then the Ground ſhould be a ſecond time hoed over to deſtroy them, which if well performed, and in dry Weather, will clear the Ground from Weeds, ſo it will require no more cleaning till the Borage is decayed. The Plants which are raiſed in Autumn, will flower in *May*, but thoſe raiſed in Spring, will not flower till *June*, ſo that where a Continuation of the Flowers are required, there ſhould be a ſecond Sowing in Spring, about a Month after the firſt: this ſhould be on a ſhady Border, and if the Seaſon ſhould prove dry, the Ground muſt be Watered frequently, to bring up the Plants, this latter Sowing will continue flowering till the End of Summer.

The ſecond ſort was ſent from *Conſtantinople*, to the *Royal Garden* at *Paris*, and communicated from thence to moſt of the curious Gardens in *Europe*. This is a perennial Plant, having thick fleſhy Roots, which ſpread under the Surface of the Ground, and is thereby propagated with great Facility. It ſends out many oblong Heart-ſhaped Leaves from the Root, without any Order, having long hairy Foot Stalks; from the Root ariſes the Flower Stem, which is more than two Foot high when fully grown, having at the Joints a ſingle ſmall Leaf without Foot Stalk. The upper part of the Stalk branches out into ſeveral ſmall Foot Stalks, terminated by looſe Panicles of Flowers, of a pale blue Colour, and the Petal is reflexed backward, ſo that the connected Stamina and Style are left naked. After the flowers are fallen, the four Germen become ſo many rough Seeds, ſmaller than thoſe of the common *Borage*. It flowers in *March*, and the Seeds ripen in *May*. When the flower Stalk firſt appears, the Flowers ſeem collected into a cloſe Spike; ſome of which do often ſpread open, before the Stalk is ſix Inches high; but as the Stalks advance, they divide into many looſe Spikes.

It is eaſily propagated by the Root, which may be parted in Autumn, theſe ſhould have a dry Soil and a warm Situation, for as the Flower Stalks appear early in the Spring, when they are much expoſed they are often killed by the froſt; but if theſe Plants are planted in dry Rubbiſh, they will not grow too luxuriant, ſo will not be in Danger of ſuffering by Froſt. Some of the Seeds of this have ſcattered into the Joints of an old Wall in the *Chelſea Garden*: Where the Plants have grown without Care for two Years, and are never injured by Cold or Heat.

The 3d and 4th Sorts grow naturally in *Africa*; theſe are both annual Plants, and rarely riſe a Foot high, having rough Stalks; the Leaves of the 3d Sort are ſet on by Pairs oppoſite, with ſhort Foot Stalks, but thoſe of the 4th cloſely embrace the Stalks at their Baſe, the Flowers come out on ſhort Foot Stalks, from the Wings of the Leaves, and alſo at the Top of the Stalks; thoſe of the 3d Sort are white, and thoſe of the 4th a pale yellow; neither of them make any great Appearance, ſo are ſeldom cultivated, but in Botanick Gardens for Variety.

If the Seeds of theſe Plants are ſown in Autumn, in a warm Border, the Plants will live thro' the Winter, and flower early the following Summer, ſo will produce good Seeds; for when they are ſown in the Spring, if the Seaſon is not very favourable, they do not perfect their Seeds in *England*. The Seeds ſhould be ſown where the Plants are to remain, for they ſeldom ſucceed when they are tranſplanted.

BOSIA. This Name has been given to this Plant in Memory of a curious Botaniſt at *Leipſick*, of that Name, who had a fine Garden of Plants; this Plant was mentioned in his Catalogue, under the Title of *Frutex peregrinus Yerva-mora dictus*. By ſome of the *Engliſh* Gardeners it is called the Golden-rod Tree; but for what Reaſon, I could never learn.

The *Characters* are,

The Empalement of the Flower is compoſed of five Spear-ſhaped concave Leaves, equal and erect. It hath no Petals, but five Awl-ſhaped Stamina as long as the Empalement, and crowned by ſingle Summits; in the Center is ſituated an oval oblong pointed Germen ſupporting two ſpreading Styles, crowned by a ſingle Stigma. The Germen becomes a globular Berry with one Cell including one pointed Seed.

We have but one Sort of this Plant; *viz.*

BOSIA. *Lin. Hort. Cliff.* 84. this is the *Arbor baccifera Canarienſis, ſyringæ cærulæ foliis, purpurantibus venis, fructu monopyreno Yerva-mora Hiſpanorum. Pluk. Phyt.* Commonly called Golden-rod Tree.

This Plant is a Native of the *Canaries*; and it hath been ſince found in ſome of the *Britiſh* Iſlands in *America*: It was firſt brought into *England* from the *Canaries*, and has been long an Inhabitant of the *Engliſh* Gardens; but I have not as yet ſeen any of theſe Plants in Flower, tho' I have had many old Plants under my Care more than thirty Years: it makes a pretty ſtrong woody Shrub, growing with a Stem as large as a middling Perſon's Leg; the Branches come out very irregular, and make conſiderable Shoots in Summer, which ſhould be ſhortened every Spring, to preſerve the Heads of the Plants in any tolerable Order: Theſe Branches retain their Leaves till toward the Spring, when they fall away, and new Leaves are produced ſoon after: it may be propagated by Cutings planted in the Spring, and the Plants muſt be houſed in Winter, being too tender to live thro' the Winter, in the open Air, in this Country.

BOSQUETS are little Groves; ſo called from *Boſchetto*, *Italian*, which is a Diminutive of *Boſco*, a Wood or Grove.

Theſe are ſmall Compartments of Gardens, which are formed of Trees, Shrubs, or tall large growing Plants, planted in Quarters; and are either diſpoſed regularly in Rows, or in a more wild or accidental manner, according to the Fancy of the Owner: theſe Quarters are commonly ſurrounded with ever-green Hedges, and the Entrance formed into regular Porticos with Yews, which are by far the beſt and moſt tonſile Trees for this Purpoſe. In the Inſide of theſe Quarters may be made ſome Walks, either ſtrait or winding; which, if the Quarters are large, ſhould be ſix or eight Feet broad, and may be laid with Turf, and kept well mowed and rolled, which will render the walking much eaſier and pleaſanter than if the Walks are only the common Earth, which in ſmaller Quarters can't be otherwiſe, for if the Trees are cloſe, and the Walks narrow, ſo as to be ſhaded and over hung by the Trees, the Graſs will not grow.

Theſe Quarters may be alſo ſurrounded with Hedges of Lime, Elm, Hornbeam, or Beech; which ſhould be kept well ſheared, and not ſuffered to riſe too high; that the Heads of the Trees may be fully ſeen over them, and the Stems only hid from the Sight, when in the Walks on the Outſide of the Quarters.

In planting theſe Boſquets, you ſhould obſerve to mix the Trees, which produce their Leaves of different Shapes, and various Shades of Green, and hoary or meally Leaves, ſo as to afford an agreeable Proſpect: beſides, there is a great Variety of different Fruits, which theſe Trees produce in Autumn; which, altho' of little or no Uſe, that we know of, yet have a very good Effect, in affording an agreeable Variety for ſome time after the Leaves are gone; as the *Euonymus*, or Spindle Tree, the *Opulus*, or Marſh Elder, the Cock-ſpur Hawthorn, with many other Sorts, two numerous to mention in this Place; whoſe Berries afford Food for the Birds, ſo that they will be thereby invited to ſtay and harbour in theſe little Groves, which by their different Notes, will render theſe Places very agreeable in the Spring. But I would adviſe never to mix Ever-greens with deciduous Trees; for, beſides the ill Effect it hath to the Sight (eſpecially in Winter), they ſeldom thrive well together; ſo that thoſe Quarters where you intend to have Ever-greens, ſhould be wholly planted therewith; and in the other Parts mix as many Varieties of different Trees, which caſt their Leaves, as you can conveniently; and alſo plant ſome of the largeſt growing Flowers (eſpecially near the Outſide of the Quarters), which will add greatly to the Variety, if they have but Air enough to grow; but if any of the ever-green Trees are mixed with the deciduous, it ſhould be only to border the Wood.

Theſe Boſquets are proper only for ſpacious Gardens, being expenſive in their firſt making, as alſo in keeping.

BOTRYS. *See* Chenopodium.

BOX-TREE. *See* Buxus.

BRABEJUM, *African* Almond, *vulgò.*

This Name was given to this Plant by Dr. *Linnæus*, who has ſeparated it from the Genus of Almond on account of the Shape of the Flower.

The *Characters* are,

The Flower hath no Empalement, but is compoſed of four narrow obtuſe Petals which are erect, forming a Tube, but are turned backward at Top; it hath four ſlender Stamina which are inſerted in the Bottom of the Petals, and are of the ſame Length, having ſmall Summits. In the Center is a ſmall hairy Germen, ſupporting a ſlender Style, crowned by a ſingle Stigma, the German afterward becomes an oval, hairy, dry Berry, incloſing an oval Nut.

We have but one Sort of this Plant, *viz.*

BRABEJUM. *Hort. Cliff.* This is the *Amygdalus Æthiopica, fructu holoſerico. Breyn. Cent. African*, or *Ethiopian* Almond, with a ſilky Fruit.

This Tree is a Native of the Country about the *Cape of Good Hope*, from whence it was firſt introduced into the curious Gardens in *Holland*, and has ſince been diſtributed into many Parts of *Europe*.

In this Country it ſeldom grows above eight or nine Feet high; but in its native Soil it is a Tree of middling Growth; but as it muſt be kept in Pots, or Tubs, in this Country, being too tender to live through the Winter in the open Air, ſo we cannot expect to ſee it grow to a great Size.

It riſes with an upright Stem, which is ſoft, and full of Pith within, and covered with a brown Bark. From the Stem are ſent out horizontal Branches on every Side, and at every Joint, the lower being the longeſt, and every Tier diminiſhing to the Top, ſo as to form a Sort of Pyramid. The Leaves come out all round the Branches at each Joint, which are from four to five Inches long, and Half an Inch broad in the Middle, of a deep green on their upper Side, but of a pale ruſſet Colour on their under Side, and are indented on their Edges, ſtanding on very ſhort Foot Stalks. The Flowers are produced toward the End of the Shoots, coming out from between the Leaves quite round the Branches, which are of a pale Colour, inclining to white; theſe appear early in the Spring, and fall away without any Fruit ſucceeding them in this Country.

This Plant is, with Difficulty, propagated by Layers; theſe are often two Years before they make Roots ſtrong enough to be taken from the old Plants; when the Branches are laid down, it will be a good Method to ſlit them at a Joint (as is practiſed in laying Carnations) which will promote their taking Root.

Theſe muſt have but little Water given them, eſpecially in Winter, for as the young Shoots are chiefly Pith within, ſo they are very ſubject to rot with much Moiſture. The beſt Time to make the Layers is in *April*, juſt as the Plants are beginning to ſhoot, and the Layers muſt always be made of the former Year's Shoots. As this Plant is very difficult to propagate, ſo it is very ſcarce in *Europe*, there being but few in *England*, and not many in the *Dutch* Gardens at preſent.

The Plants muſt have a good Green-houſe in Winter, but in Summer ſhould be ſet abroad in a ſheltered Situation, where they will thrive, and annually produce Flowers in the Spring, ſo will make a pretty Variety among other exotick Plants in the Green-houſe.

BRANCA URSINA. *See* Acanthus.

BRASSICA, The Cabbage.

The *Characters* are,

The Empalement is compoſed of four upright Spear-ſhaped ſmall Leaves, convex at their Baſe, and fall off. The Flower is Croſs-ſhaped, having four, oval, plain Petals, which ſpread open, and are entire. It hath four oval nectarious Glands, one being ſituated on each Side of the ſhort Stamina and Pointal, and one on each Side the longer, and *the Empalement. It hath ſix Stamina, Awl-ſhaped and erect, two of which are oppoſite, and the Length of the Empalement, the other four are longer; theſe have erect pointed Summits. It hath a taper Germen the Length of the Stamina, having a ſhort Style, thicker than the Germen, and crowned by an entire Stigma. The Germen becomes a long taper Pod, depreſſed on each Side, and is terminated by the Apex of the intermediate Partition, which divides it into two Cells, filled with round Seeds.*

I ſhall firſt enumerate the Species, which are diſtinct, and afterward mention the Varieties, which are cultivated for the Table; for although moſt of theſe may be continued diſtinct by proper Care, without Alteration; yet as they are liable to vary when planted near each other for Seeds, ſo we muſt not admit of their being called different Species.

The *Species* are,

1. BRASSICA *radice cauleſcente tereti carnoſâ. Hort. Cliff.* 338. This is the *Braſſica capitata alba. C. B. P.* 111. The common white Cabbage.
2. BRASSICA *radice cauleſcente orbiculari carnoſo, foliis ſeſſilibus.* This is the *Braſſica radice napiformi. Tourn. Inſt. R. H.* 219. Turnep-rooted Cabbage.
3. BRASSICA *radice cauleſcente tereti carnoſâ, floralibus multicaulis.* This is the *Braſſica Cauliflora. Caſp. Bauh. Pin.* 111. The Cauliflower.
4. BRASSICA *radice cauleque tenui ramoſo perenni foliis alternis marginibus inciſis.* This is the *Braſſica maritima arborea ſive procerior ramoſa. Mor. Hiſt.* 2. p. 208. Taller ſhrubby branching Sea Cabbage.
5. BRASSICA *foliis lanceolato-ovatis glabris indiviſis dentatis. Hort. Upſ.* 191. Cabbage with entire oval Spear-ſhaped ſmooth Leaves, which are indented.
6. BRASSICA *foliis oblongo-cordatis amplexicaulibus, integerrimis.* Cabbage with oblong Heart-ſhaped Leaves embracing the Stalks, which are entire. *Braſſica campeſtris perfoliata flore purpureo. C. B. P.* 112. *Champaign* Colewort with a thorough Wax Leaf, and a purple Flower.
7. BRASSICA *foliis cordatis ſemiamplexicaulibus, marginibus dentatis, ſiliquis tetragonis longiſſimis.* This is the *Braſſica Orientalis perfoliata flore albo ſiliquâ quadrangulâ. Tourn. Cor.* 16. Eaſtern perfoliated Colewort with a white Flower and quadrangular Pod.
8. BRASSICA *radice cauleſcente tereti, foliis inferioribus petiolatis ſuperioribus ſemiamplexicaulibus.* This is the *Napus Sylveſtris. C. B. P.* 95. The wild Navew, or Cole Seed.

The *Varieties* of the firſt Sort are,

1. *Braſſica ſabauda hyberna. Lob. Icon.* The *Savoy* Cabbage, commonly called *Savoy.*
2. *Braſſica capitata rubra.* The red Cabbage.
3. *Braſſica capitata alba.* The Sugar Loaf Cabbage.
4. *Braſſica capitata alba præcox.* The early Cabbage.
5. *Braſſica peregrina moſchum olens.* Muſk Cabbage.
6. *Braſſica capitata alba minor Muſcovitica. H. A.* Small *Ruſſia* Cabbage.
7. *Braſſica capitata alba Compreſſa. Boerh. Ind. Alt.* 11. The large ſided Cabbage.
8. *Braſſica capitata viridis Sabauda.* Green Savoy.
9. *Braſſica fimbriata. C B. P.* 111. The Borecole.
10. *Braſſica fimbriata vireſcens.* Green Borecole.
11. *Braſſica fimbriata Siberica. Boerh. Ind.* 2. 12. *Siberian* Borecole, called by ſome *Scotch* Kale.

The 2d Sort is undoubtedly a diſtinct Species, for I have always found the Seeds produce the ſame, with this Difference only, that in good Ground the Stalks will be much larger than in poor Land.

The *Varieties* of the third Sort are,

1. *Braſſica Italica purpurea. Juſſ.* Purple Broccoli.
2. *Braſſica Italica alba. Juſſ.* White Broccoli.

The 2d Sort, I believe, never varies, for I have cultivated it many Years, without altering. This grows naturally on the Sea Shore, near *Dover.* It hath a perennial branching Stalk, in which it differs from all the other Species. I have continued theſe three or four Years, and have eaten the young Shoots after they had been much frozen, when they were very ſweet and good; but at other Times they are very ſtrong and ſtringy. In very ſevere Winters, when the other Sorts are deſtroyed, this is a neceſſary Plant, for the moſt ſevere Froſts do not injure it. The Leaves are inclining to a purple Colour, and placed alternately on the Branches. The Flower Stalks grow from the End of the Branches, and ſpread out horizontally; but thoſe which ariſe from the Center of the Plants, grow erect, and ſeldom put out Branches.

The 3d Sort, which is the Cauliflower, has been ſuppoſed a Variety of the common Cabbage; but from more than forty Years Experience in cultivating theſe Plants, I could never find the leaſt Appearance of either Species approaching each other; and they are ſo different in their Leaves, as to be eaſily diſtinguiſhed by Perſons of Skill, when the Plants are young. But there is one eſſential Difference between them in their Flower Stems; for the common Cabbage puts out one upright Stem from the Center of the Cabbage, which afterward divides into ſeveral Branches, whereas the Cauliflower ſends out many Flower Stems from the Part eaten; which is only a compact Collection of the Heads of theſe Stalks, which afterward divides into ſo many Stems, which alſo branch out into many ſpreading Shoots, theſe form a large ſpreading Head when in flower, but never riſes pyramidically like the Cabbage.

The two Sorts of Broccoli I take to be only Varieties of the Cauliflower, for although theſe may with Care be kept diſtinct, yet I doubt, if they were to ſtand near each other for Seeds, if they would not intermix; and I am the rather inclined to believe this, from the various Changes which I have obſerved in all theſe Sorts, for I have frequently had Cauliflowers of a green Colour, with Flower Buds regularly formed at the Ends of the Shoots, as thoſe of Broccoli, though the Colour was different, and the white Broccoli approaches ſo near to the Cauliflower, as to be with Difficulty diſtinguiſhed from it; yet when theſe are cultivated with Care, and never ſuffered to ſtand near each other when left to produce Seeds, they may be kept very diſtinct, in the ſame Garden; for the Variations of theſe Plants is not occaſioned from the Soil, but the mixing of the Farina of the Flowers with each other, where they are planted near together: therefore thoſe Perſons who are curious to preſerve the ſeveral Varieties diſtinct, ſhould never ſuffer the different Kinds to ſtand near each other for Seed.

The Cauliflower was firſt brought to *England* from the Iſland of *Cyprus*, where I have been informed they are in very great Perfection at preſent: but it is ſuppoſed

ſed they were originally brought thither from ſome other Country: Moſt of the old Writers mention it to have been brought from that Iſland, to the different Parts of *Europe*, ſo that from thence all the Gardens in *Europe* have been ſupplied; and altho' this Plant was cultivated in a few *Engliſh* Gardens long ſince; yet it was not brought to any Degree of Perfection, till about 1680, at leaſt not to be ſold in the Markets; and ſince the Year 1700, they have been ſo much improved in *England*, that ſuch of them as before were greatly admired, would at preſent be little regarded.

This Plant has been much more improved in *England*, than in any other Part of *Europe*. In *France* they rarely have Cauliflowers till *Michaelmas*; and *Holland* is generally ſupplied with them from *England*. In many Parts of *Germany* none of them were cultivated till within a few Years paſt; and moſt Parts of *Europe* are ſupplied with Seeds from hence.

The eighth Sort, which is generally known by the Title of Rape or Cole Seed, is much cultivated in the Iſle of *Ely*, and ſome other Parts of *England* for its Seed, from which the Rape Oil is drawn; and it hath alſo been cultivated of late Years, in other Places to great Advantage for feeding Cattle. This hath been lately joined to the *Napus Sativa*, or Garden Navew, ſuppoſing them to be the ſame Species; but I have cultivated both Sorts more than twenty Years, and could never obſerve either of them to vary; indeed the whole Appearance of the Plants, is ſufficient to determine them as diſtinct Species; but as the Garden Navew approaches nearer the Turnep than the Cabbage, ſo I ſhall treat of that under the Title of *Rapa*.

The Cole Seed, when cultivated for feeding of Cattle, ſhould be ſown about the Middle of *June*. The Ground for this ſhould be prepared for it in the ſame Manner as for Turneps. The Quantity of Seeds for an Acre of Land, is from ſix to eight Pounds, and as the Price of the Seeds is not great, ſo it is better to allow eight Pounds; for if the Plants are too cloſe in any Part, they may be eaſily thined, when the Ground is hoed. When the Plants have put out ſix Leaves, they will be fit to hoe, which muſt be performed in the ſame Manner as is practiſed for Turneps, with this Difference only, of leaving theſe much nearer together; for as they have fibrous Roots, and ſlender Stalks, they do not require near ſo much room. Theſe Plants ſhould have a ſecond Hoeing, about five or ſix Weeks after the firſt, which, if well performed in dry Weather, will entirely deſtroy the Weeds, ſo they will require no farther Culture. By the Middle of *November* theſe will be grown large enough for Feeding, when, if there is a Scarcity of Fodder, this may be either cut, or fed down; but where there is not an immediate Want of Food, it had better be kept as a Reſerve for hard Weather, or Spring Feed, when there may be a Scarcity of other green Food. If the Heads are cut off, and the Stalks left in the Ground, they will ſhoot again early in the Spring, and produce a good ſecond Crop in *April*, which may be either fed off, or permitted to run to Seeds, as is the Practice, where this is cultivated for the Seeds: But if the firſt is fed down, there ſhould be Care taken that the Cattle do not deſtroy their Stems, or pull them out of the Ground. As this Plant is ſo hardy, as not to be deſtroyed by Froſt, it is of great Service in hard Winters for feeding Ewes; for when the Ground is ſo hard frozen that Turneps cannot be taken up, theſe Plants may be cut off, for a conſtant Supply. In ſeveral Places where I have ſown this Seed, I have found that one Acre of Land will produce as much Food, as almoſt two Acres of Turneps; and this will afford late Feed after the Turneps are run to Seed. If it is afterward permitted to ſtand for Seed, one Acre will produce as much as, at a moderate Computation, will ſell for five Pounds, clear of Charges.

Partridges, Pheaſants, Turkeys, and moſt other Fowl, are very fond of this Plant; ſo that wherever it is cultivated, if there are any Birds in the Neighbourhood, they will conſtantly lie among theſe Plants.

The Seeds are ſown in Gardens, for Winter and Spring Sallets, this being one of the ſmall Sallet Herbs.

The common white, red, flat, and long-ſided Cabbages are chiefly cultivated for Winter Uſe: The Seeds of theſe Sorts muſt be ſown the End of *March*, or Begining of *April*, in Beds of good freſh Earth; and in *May*, when the young Plants have about eight Leaves, they ſhould be pricked out into ſhady Borders, about three Inches ſquare; that they may acquire Strength, and to prevent their growing long ſhanked.

About the Beginning of *June*, you muſt tranſplant them out, where they are to remain for good (which in the Kitchen Gardens near *London*, is commonly between Cauliflowers, Artichokes, *&c.* at about two Feet and a Half Diſtance in the Rows); but if they are planted for a full Crop in a clear Spot of Ground, the Diſtance from Row to Row ſhould be three Feet and a Half, and in the Rows two Feet and a Half aſunder: If the Seaſon ſhould prove dry when they are tranſplanted out, you muſt water them every other Evening, until they have taken freſh Root; and afterwards, as the Plants advance in Height, you ſhould draw the Earth about their Stems with a Hoe, which will keep the Earth moiſt about their Roots, and greatly ſtrengthen the Plants: You muſt alſo obſerve to keep them clear from Weeds, which are apt to draw the Plants up tall (if ſuffered to grow amongſt them), and often ſpoil them. Some of theſe Cabbages will be fit for Uſe ſoon after *Michaelmas*, and will continue until the End of *February*, if not deſtroyed by bad Weather; to prevent which, the Gardeners near *London* pull up their Cabbages in *November*, and trench their Ground up in Ridges, laying their Cabbages againſt their Ridges as cloſe as poſſible on one Side, burying their Stems in the Ground: In this Manner they let them remain till after *Chriſtmas*, when they cut them for the Market; and altho' the outer Part of the Cabbage be decayed (as is often the Caſe in very wet or hard Winters), yet, if the Cabbages were large and hard when laid, the Inſide will remain ſound.

The *Ruſſian* Cabbage was formerly in much greater Eſteem than at preſent, it being now only to be found in particular Gentlemen's Gardens, who cultivate it for their own Uſe, and is rarely ever brought to the Market. This muſt be ſown late in the Spring of the Year, and managed as thoſe before directed, with this Difference only, that theſe muſt be ſooner planted out for good, and muſt have an open clear Spot of Ground, and require much leſs Diſtance every Way; for it is but a very ſmall hard Cabbage. Theſe will be fit for uſe in *July* or *Auguſt*; but will not continue long before they will break, and run up to Seed. The beſt Method to have theſe Cabbages good, is to procure freſh Seeds from abroad every Year; for it is apt to degenerate in *England* in a few Years.

The early and Sugar Loaf Cabbages are commonly ſown for Summer Uſe, and are what the Gardeners about *London* commonly call *Michaelmas* Cabbages. The Seaſon for ſowing them is about the End of *July*, or Beginning of *Auguſt*, in an open Spot of Ground; and when the Plants have got eight Leaves, you muſt prick them into Beds at about three Inches Diſtance every Way, that the Plants may grow ſtrong and ſhort ſhanked; and in the Middle of *October* you ſhould plant them out for good: The Diſtance that theſe require is, three Feet Row from Row, and two Feet and a Half aſunder in the Rows. The Gardeners near *London* commonly plant theſe Cabbages upon the ſame Spot of Ground, where their Winter Spinach is ſown; ſo that when the Spinach is cleared off in the Spring, the Ground will have a Crop of Cabbages upon it; you muſt therefore clear off the Spinach juſt round each Plant early in the Spring, that with a Hoe you may draw the Earth up to the Stem; and when all your Spinach is cleared off, which is commonly in the Beginning of *April*, you muſt hoe down all the Weeds, and draw up the Earth again about your Cabbage Plants.

In *May*, if your Plants were of the early Kind, they will turn in their Leaves for Cabbaging; at which time, the Gardeners near *London*, in order to obtain them a little ſooner, tie in their Leaves cloſe with a ſlender Oſier-twig to blanch their Middle; by which means they have them at leaſt a Fortnight ſooner than they could have if they were left untied.

The early Cabbage being the firſt, we ſhould chooſe (if for a Gentleman's Uſe) to plant the fewer of them, and a greater Quantity of the Sugar-loaf Kind, which comes after them; for the early Kind will not ſupply the Kitchen long, generally cabbaging apace when they begin, and as ſoon grow hard, and burſt open; but the Sugar-loaf Kind is longer before it comes, and is ſlow in cabbaging; and, being of an hollow Kind, will continue good for a long time. I have known a large Quarter of Ground, planted with this Sort of Cabbage for the Market, which afforded a Supply for near three Months together. This, though of ſingular Service to a Gentleman's Garden, is not ſo much for the Advantage of the Market Gardener, who loves to have his Ground cleared ſooner, that he may have another Crop upon it, of Celery, Endive, *&c.* which is more to his Purpoſe; for they, paying large Rents for their Land, are obliged to have as many Crops in a Year as poſſible.

Although I before have adviſed the planting out Cabbages for good in *October*, yet the Sugar-loaf Kind may be planted out in *February*, and will ſucceed as well as if planted earlier, with this Difference only, that they will be later before they cabbage. You ſhould alſo reſerve ſome Plants of the early Kind in ſome well-ſheltered Spot of Ground, to ſupply your Plantation, in caſe of a Defect; for in mild Winters many of the Plants are apt to run to Seed, eſpecially when their Seeds are ſown too early, and in ſevere Winters they are often deſtroyed.

The *Savoy* Cabbages are propagated for Winter Uſe, being generally eſteemed the better when pinched by Froſt: Theſe muſt be ſown about the Middle of *April*, and treated after the Manner directed for the common white Cabbage; with this Difference, that the Savoy Cabbage may be planted cloſer; two Feet and a Half ſquare will be ſufficient. Theſe are always much better when planted in an open Situation, clear from Trees and Hedges; for in cloſe Places they are very ſubject to be eaten up by Caterpillers, and other Vermin, eſpecially if the Autumn proves dry.

The Borecole may be alſo treated in the ſame Manner, but need not be planted above one Foot aſunder in the Rows, and the Rows two Feet diſtance: Theſe are never eaten till the Froſt hath rendered them tender; for otherwiſe they are tough and bitter.

The Seeds of the Broccoli, (of which there are ſeveral Kinds; *viz.* the *Roman*, or purple, and the *Neapolitan*, or white, and the black Broccoli, with ſome others; but the *Roman* is chiefly preferred to them all) ſhould be ſown about the latter End of *May*, or Beginning of *June*, in a moiſt Soil; and when the Plants have eight Leaves, tranſplant them into Beds (as was directed for the common Cabbage); and toward the latter End of *July* they will be fit to plant out for good, which ſhould be in ſome well-ſheltered Spot of Ground, but not under the Drip of Trees: The Diſtance theſe require is about a Foot and a Half in the Rows, and two Feet Row from Row. The Soil, in which they ſhould be planted, ought to be rather light than heavy, ſuch as are the Kitchen Gardens near *London*: If your Plants ſucceed well (as there will be little Reaſon to doubt, unleſs the Winter proves extreme hard), they will begin to ſhew their ſmall Heads, which are ſomewhat like a Cauliflower, but of a purple Colour, about the End of *December*, and will continue eatable till the Middle of *April*.

The brown or black Broccoli is by many Perſons greatly eſteemed, though it doth not deſerve a Place in the Kitchen-Garden, where the *Roman* Broccoli can be obtained, which is much ſweeter, and will continue longer in Seaſon: Indeed, the brown Sort is much hardier, ſo that it will thrive in the coldeſt Situations, where the *Roman* Broccoli is ſometimes deſtroyed in very hard Winters. The brown Sort ſhould be ſown the Middle of *May*, and managed as hath been directed for the common Cabbage, and ſhould be planted about two Feet and a Half aſunder. This grows very tall, ſo ſhould have the Earth drawn up to the Stems as they advance in Height. This doth not form Heads ſo perfect as the *Roman* Broccoli; the Stems and Hearts of the Plants are the Parts which are eaten.

The *Roman* Broccoli (if well managed) will have large Heads, which appear in the Center of the Plants, like Cluſters of Buds. Theſe Heads ſhould be cut before they run up to Seed, with about four or five Inches of the Stem; the Skin of theſe Stems ſhould be ſtripped off, before they are boiled: Theſe will be very tender and little inferior to Aſparagus. After the firſt Heads are cut off, there will be a great Number of Side Shoots produced from the Stems, which will have ſmall Heads to them, but are full as well flavoured as the large. Theſe Shoots will continue good until the Middle of *April*, when the Aſparagus will come in Plenty to ſupply the Table.

The *Naples* Broccoli hath white Heads, very like the Cauliflower, and eats ſo like it, as not to be diſtinguiſhed from it: This is much tenderer than the *Roman* Broccoli; ſo is not ſo much cultivated in *England*; for as the Gardens near *London* generally produce great Plenty of late Cauliflowers, which, if the Seaſon proves favourable, will continue till *Chriſtmas*; the *Naples* Broccoli, coming at the ſame Time, is not ſo valuable.

Beſides this firſt Crop of Broccoli (which is uſually ſown in the End of *May*), it will be proper to ſow another Crop the Beginning of *July*, which will come in to ſupply the Table the latter End of *March*, and the Begining of *April*; and being very young, will be extremely tender and ſweet.

In order to ſave good Seeds of this Kind of Broccoli in *England*, you ſhould reſerve a few of the largeſt Heads of the firſt Crop, which ſhould be let remain to run up to Seed, and all the under Shoots be conſtantly ſtripped off, leaving only the main Stem to flower and ſeed. If this be duly obſerved, and no other Sort of Cabbage permitted to ſeed near them, the Seeds will be as good as thoſe procured from abroad, and the Sort may be preſerved in Perfection many Years.

The Manner of preparing the *Naples* Broccoli for the Table is this: When your Heads are grown to their full Bigneſs (as may be eaſily known by their dividing, and beginning to run up), then you ſhould cut them off, with about four Inches of the tender Stem to them; then ſtrip off the outer Skin of the Stem, and after having waſhed them, boil them in a clean Linen Cloth (as is practiſed for Cauliflowers), and ſerve them up with Butter, &c. and, if they are of a right Kind, they will be tenderer than any Cauliflowers, though very like them in Taſte.

The Turnep rooted Cabbage was formerly more cultivated in *England*, than at preſent; for ſince other Sorts have been introduced which are much better flavoured, this Sort has been neglected. Some eſteem this Kind for Soups; but it is generally too ſtrong for moſt *Engliſh* Palates, and is ſeldom good but in hard Winters, which will render it tender, and leſs ſtrong.

It may be propagated by ſowing the Seeds in *April*, on a Bed of light freſh Earth; and when the Plants are come up about an Inch high, they ſhould be tranſplanted out in a ſhady Border, at about two Inches Diſtance every Way, obſerving to water them until they have taken Root; after which time they will require no other Culture, but to keep them clear from Weeds, unleſs the Seaſon ſhould prove extremely dry; in which caſe it will be proper to water them every four or five Days, to prevent their being ſtinted by the Mildew, which is ſubject to ſeize theſe Plants in very dry Weather.

In the Beginning of *June*, they ſhould be tranſplanted out where they are to remain, allowing them two Feet Diſtance every Way, obſerving to water them until they have taken Root; and as their Stems advance, the Earth ſhould be drawn up to them with a Hoe, which will preſerve a Moiſture about their Roots, and prevent their Stems from drying, and growing woody, ſo that the Plants will grow more freely, but it ſhould not be drawn very high, for as it is the globular Part of the Stalk which is eaten, ſo that ſhould not be covered. In Winter they will be fit for Uſe, when they ſhould be cut off, and the Stalks pulled out of the Ground, and thrown away, as good for nothing after the Stems are cut off.

The curled Colewort or *Siberian* Borecole is now more generally eſteemed than the former. It is extreme hardy, never injured by Cold, but always ſweeter in ſevere Winters, than in mild Seaſons. This may be propagated by ſowing the Seeds the Beginning of *July*; and when the Plants are ſtrong enough for Tranſplanting, they ſhould be planted in Rows about a Foot and a half aſunder, and ten Inches Diſtance in the Rows; this Work ſhould be performed at a moiſt time, when the Plants will ſoon take Root, and require no farther Care. Theſe will be fit for Uſe after *Chriſtmas*, and continue good until *April*, ſo are very uſeful in a Family.

The Muſk Cabbage has, thro' Negligence, been almoſt loſt in *England*, tho' it is one of the beſt Kinds we have; but being tenderer than many other Sorts, is not ſo profitable for Gardeners who ſupply the Markets; but thoſe who cultivate them for their own Table, ſhould make Choice of this, rather than any of the common Cabbage; for it is always looſer, and the Leaves more criſp and tender, and has a moſt agreeable muſky Scent when cut. This may be propagated in the ſame manner as the common Cabbage, and ſhould be allowed the ſame Diſtance: it will be fit for Uſe in *October*, *November*, and *December*; but, if the Winter proves hard, theſe will be deſtroyed much ſooner than the common Sort.

The common Colewort or *Dorſetſhire* Kale, is now almoſt loſt near *London*, where the Markets are uſually ſupplied with Cabbage Plants inſtead of them, which being tenderer, and more delicate, in Winter are much more cultivated than the common Colewort; this laſt is better able to reſiſt the Cold in ſevere Winters, but is not near ſo delicate till pinched by Froſt. Where Farmers ſow Coleworts to feed their Milch-cattle in the Spring, when there is a Scarcity of Herbage, the common Colewort is to be preferred, being ſo very hardy, that no Froſt will deſtroy it. The beſt Method to cultivate this Plant in the Fields is, to ſow the Seeds about the Beginning of *July*, chooſing a moiſt Seaſon, which will bring up the Plants in about ten Days or a Fortnight: the Quantity of Seed for an Acre of Land is nine Pounds; when the Plants have got five or ſix Leaves, they ſhould be hoed, as practiſed for Turneps, cuting down all the Weeds from among them, and thining the Plants where they are too thick; they ſhould be left thicker than Turneps, becauſe they are more in Danger of being deſtroyed by the Fly: this Work ſhould be performed in dry Weather, that the Weeds may be killed; for if it ſhould prove moiſt ſoon after, the Weeds will take Root again, and render the Work of little Uſe. About ſix Weeks after, the Plants ſhould have a ſecond Hoeing, which, if carefully performed in dry Weather, will entirely deſtroy the Weeds, and they will require no farther Culture: In Spring they may either be drawn up and carried out to feed the Cattle, or they may be turned in to feed upon them; but the former Method is to be preferred, becauſe there will be little Waſte; whereas, when the Cattle are turned in among the Plants, they will tread down and deſtroy more than they eat, eſpecially if not fenced off by Hurdles.

The perennial Colewort is alſo little cultivated in the Gardens near *London* at preſent. This is very hardy, and may be cultivated as the former Sort. This will continue two Years before it runs up to Seed, and will afterwards produce many Side Shoots; in poor Land it will continue three or four Years; but in rich Soils not ſo long. This may be uſed as the former Sort, to feed Cattle; for it is not ſo good for the Table, as the Plants now cultivated for that Purpoſe, unleſs in very ſevere Froſt.

The 5th Sort came from *China*, where it is cultivated as an eſculent Plant; of this there are two or three Varieties, which I have cultivated ſome Years, but I find them as variable as our common Cabbage. Theſe are annual Plants, which, if ſown in *April*, will flower in *July*, and perfect their Seeds in *October*. They never cloſe their Leaves to form a Head, like the common Cabbage, but grow open and looſe, more like the wild Navew, and are very unfit for the Table. As theſe are generally in Perfection the Beginning of *July*, I imagined their ſtrong Flavour and Toughneſs might be occaſioned by the Warmth of the Seaſon; therefore ſowed ſome of the Seeds in *July*, to make Trial of them in Winter; but in the midſt of Froſt, I found them much worſe than our common Colewort, ſo thought them not worth propagating.

The other 2 Sorts of Cabbage are Varieties fit for a Botanick Garden; but are Plants of no Uſe. Theſe may be propagated by ſowing their Seeds on a Bed of light Earth, early in the Spring, in the Place where they are deſigned to remain, for they do not bear tranſplanting well: When the Plants are come up pretty ſtrong, they ſhould be thinned, ſo as to leave them four or five Inches apart; and they muſt be conſtantly kept clear from Weeds; they flower in *June*, and their Seeds ripen in *Auguſt*, which if permitted to fall, the Plants will come up, and maintain themſelves without any Care but to keep them clear from Weeds. They are annual Plants, and periſh when they have perfected their Seeds.

The beſt Method to ſave the Seeds of all Sorts of Cabbages is, about the End of *November* to pull up ſome of your beſt Cabbages, and hang them in a Shed, or other covered Place, for three or four Days by their Stalks, that the Water may drain from between their Leaves; then plant them in a Border, under a Hedge or Pale, quite down to the Middle of the Cabbage, leaving only the upper Part of the Cabbage above Ground, obſerving to raiſe the Earth about it, ſo that it may ſtand a little above the Level of the Ground; eſpecially if the Ground is wet, they will require to be raiſed pretty much above the Surface. If the Winter ſhould prove very hard, lay a little Straw or Peaſe Haulm lightly upon them, to ſecure them from the Froſt; taking it off as often as the Weather proves mild, leſt by keeping them too cloſe they ſhould rot. In Spring theſe Cabbages will ſhoot out ſtrongly, and divide into a great Number of ſmall Branches: You muſt therefore ſupport their Stems, to prevent their being broken off by the Wind; and if the Weather ſhould be very hot ard dry when they are in Flower, refreſh them with Water once a Week all over the Branches, which will greatly promote their Seeding, and preſerve them from Mildew.

When the Pods begin to change brown, you will do well to cut off the extreme Part of every Shoot with the Pods, which will ſtrengthen your Seeds; for it is generally obſerved, that thoſe Seeds which grow near the Top of the Shoots, are very ſubject to run to Seed before they cabbage; ſo that by this there will be no Loſs, but a great Advantage; eſpecially if you have more Regard to the Quality than to the Quantity of the Seeds; which indeed is not always the Caſe, when it is intended for Sale: But thoſe who ſave it for their own Uſe, ſhould be very careful to have it good.

When your Seeds begin to ripen, you muſt be particularly careful, that the Birds do not deſtroy it; for they are very fond of theſe Seeds. In order to prevent them, ſome uſe old Nets, which they throw over the Seeds, to prevent their geting to it: But this will not always do; for, unleſs the Nets are very ſtrong, they will force their Way through them, as I have often ſeen; but the beſt Method I know, is to get a Quantity of Birdlime, and dawb over a Parcel of ſlender Twigs, which ſhould be faſtened at each End to ſtronger Sticks, and placed near the upper Part of the Seed, in different Places, ſo that the Birds may alight upon them, by which Means they will be faſtened thereto; where you muſt let them remain a conſiderable Time, if they cannot get off themſelves: And although there ſhould not above two or three Birds be caught, yet it will ſufficiently terrify the reſt, that they will not come to that Place again for a conſiderable Time after, as I have experienced.

When the Seeds are fully ripe, cut off the Stalks, and, after drying, threſh it out, and preſerve it in Bags.

But in planting Cabbages for Seed, I would adviſe never to plant more than one Sort in a Place, or near one another: As for Example, never plant red and white Cabbages near each other, nor Savoy with either white or red Cabbages; for I am very certain they will, by the Commixture of their *Effluvia*, produce a Mixture of Kinds; and it is wholly owing to this Neglect, that the Gardeners rarely ſave any good red Cabbage Seed in *England*, but are obliged to procure freſh Seeds from Abroad, ſuppoſing the Soil or Climate of *England* alters them from red to white, and of a mixed Kind between both; whereas, if they would plant red Cabbages by themſelves for Seeds, and not ſuffer any other to be near them, they might continue the Kind as good in *England*, as in any other Part of the World: For in the *Dutch* Gardens, from whence the beſt Seeds of red Cabbages are procured, they cultivate no other Sort.

Caulifiowers have of late Years been ſo far improved in *England*, as to exceed in Goodneſs and Magnitude what are produced in moſt Parts of *Europe*, and by the Skill of the Gardener, are continued for ſeveral Months together; but the moſt common Seaſon for the great Crop, is in *May*, *June*, and *July*. I ſhall therefore begin with Directions for obtaining them in this Seaſon.

Having procured a Parcel of good Seed, of an early Kind, ſow it about the twenty-firſt of *Auguſt*, upon an old Cucumber or Melon Bed, ſifting a little Earth over the Seeds, about a Quarter of an Inch thick; and if the Weather ſhould prove extreme hot and dry, ſhade the Bed with Mats, to prevent the Earth from drying too faſt, which would endanger the ſpoiling of your Seed; and give it gentle Waterings, as you may ſee occaſion. In about a Week's Time your Plants will appear above Ground, when you muſt take off your Coverings by

Degrees; but do not expoſe them too much to the open Sun at firſt: In about a Month's Time after Sowing, your Plants will be fit to prick out; you ſhould therefore put ſome freſh Earth upon your old Cucumber or Melon Beds; or where theſe are not to be had, ſome Beds ſhould be made with a little new Dung, which ſhould be troden down cloſe, to prevent the Worms from getting through it; but it ſhould not be hot Dung, which would be hurtful to the Plants at this Seaſon, eſpecially if it proves hot; into this Bed you ſhould prick your young Plants at about two Inches ſquare, obſerving to ſhade and water them at firſt planting; but do not water them too much after they are growing, nor ſuffer them to receive too much Rain, if the Seaſon ſhould prove wet, which would be apt to make them black ſhanked (as the Gardeners term it, which is no leſs than a Rottenneſs in their Stems), and is the Deſtruction of the Plants ſo affected.

In this Bed they ſhould continue till about the thirtieth of *October*, when they muſt be removed into the Place where they are to remain during the Winter Seaſon, which, for the firſt Sowing, is commonly under Bell or Hand Glaſſes, to have early Cauliflowers; and theſe ſhould be of an early Kind: But in order to have a Succeſſion during the Seaſon, you ſhould be provided with a later Kind, which ſhould be ſown four or five Days after the firſt, and managed as was directed for them.

In order to have very early Cauliflowers, make choice of a good rich Spot of Ground, well defended from the North, Eaſt, and Weſt Winds, with Hedges, Pales, or Walls; but the firſt is to be preferred, if made with Reeds, becauſe the Winds will fall dead in theſe, and not reverberate as by Pales, or Walls. This Ground ſhould be well trenched, burying therein a good Quantity of rotten Dung; then level the Ground; and if the Soil be naturally wet, raiſe it up in Beds about two Feet and a Half, or 3 Feet broad, and 4 Inches above the Level of the Ground: But if the Soil is moderately dry, you need not raiſe it at all: Then ſet your Plants, allowing about 2 Feet 6 Inches Diſtance from Glaſs to Glaſs, in the Rows, always putting two good Plants under each Glaſs, which may be at about 4 Inches from each other; and if you deſign them for a full Crop, they may be 3 Feet and a Half, Row from Row: But if you intend to make Ridges for Cucumbers or Melons between the Rows of Cauliflower Plants (as is generally practiſed by the Gardeners near *London*), you muſt then make your Rows 8 Feet aſunder.

When you have planted them, if the Ground is very dry, give them a little Water, and then ſet the Glaſſes over them, which may remain cloſe down until they have taken Root, which will be in about a Week or ten Days Time, unleſs there ſhould be a kindly Shower of Rain; in which caſe you may ſet off the Glaſſes, that the Plants may receive the Benefit of it; and in about ten Days after planting, you ſhould be provided with a Parcel of forked Sticks or Bricks, with which you ſhould raiſe your Glaſſes about 3 or 4 Inches on the Side toward the South, that your Plants may have free Air: In this Manner your Glaſſes ſhould remain over the Plants, Night and Day, unleſs in froſty Weather, when you ſhould ſet them down as cloſe as poſſible: Or if the Weather ſhould prove very warm, which many times happens in *November*, and ſometimes in *December*, in this Caſe, you ſhould keep your Glaſſes off in the Day Time, and put them on only in the Night, leſt, by keeping the Glaſſes over them too much, you ſhould draw them into Flower at that Seaſon; which is many times the Caſe in mild Winters, eſpecially if unſkilfully managed.

Toward the latter End of *February*, if the Weather proves mild, prepare another good Spot of Ground, to remove ſome of the Plants into, from under the Glaſſes, which ſhould be well dunged and trenched (as before); then ſet off your Glaſſes; and, after making choice of one of the moſt promiſing Plants under each Glaſs, which ſhould remain for good, take away the other Plant, by raiſing it up with a Trowel, *&c.* ſo as to preſerve as much Earth to the Root as poſſible; but have a great Regard to the Plant that is to remain, not to diſturb or prejudice its Roots: Then plant thoſe you have taken out, at the Diſtance before directed, *viz.* If for a full Crop, 3 Feet and a Half, Row from Row; but if for Ridges of Cucumbers between them, 8 Feet, and 2 Feet 4 Inches Diſtance in the Rows: Then, with a ſmall Hoe, draw the Earth up to the Stems of the Plants which were left under the Glaſſes, taking great Care not to let the Earth fall into their Hearts; and ſet your Glaſſes over them again, raiſing your Props an Inch or two higher than before, to give them more Air, obſerving to take them off whenever there may be ſome gentle Showers, which will greatly refreſh the Plants.

In a little Time after, if you find your Plants grow ſo faſt as to fill the Glaſſes with their Leaves, then dig ſlightly about the Plants, and raiſe the Ground round them broad enough for the Glaſſes to ſtand, about 4 Inches high, which will give your Plants a great deal of Room by raiſing the Glaſſes ſo much higher, when they are ſet over them; and by this Means they may be kept covered until *April*, which otherwiſe they could not, without Prejudice to their Leaves: This is a great Advantage to them; for many times we have Returns of ſevere Froſts at the latter End of *March*, which prove very hurtful to theſe Plants, if expoſed thereto, eſpecially after having been nurſed up under Glaſſes.

After you have finiſhed your Beds, ſet the Glaſſes over your Plants again, obſerving to raiſe the Props pretty high, eſpecially if the Weather be mild, that they may have free Air to ſtrengthen them; and in mild ſoft Weather ſet off your Glaſſes, as alſo in gentle Showers of Rain: You muſt now begin to harden them by Degrees to endure the open Air; however, it is adviſable to let the Glaſſes remain over them as long as poſſible, if the Nights ſhould be froſty, which will greatly forward your Plants: But be ſure do not let the Glaſſes remain upon them in very hot Sun-ſhine, eſpecially if their Leaves preſs againſt the Sides of the Glaſſes; for I have often obſerved, in ſuch Caſes, that the Moiſture which hath riſen from the Ground, together with the Perſpiration of the Plants, which, by the Glaſſes remaining over them, hath been detained upon the Leaves of the Plants, and when the Sun hath ſhone hot upon the Sides of the Glaſſes, hath acquired ſuch a powerful Heat, as to ſcald all their larger Leaves, to the no ſmall Prejudice of the Plants: Nay, ſometimes I have ſeen large Quantities of Plants ſo affected therewith, as never to be worth any thing after.

If your Plants have ſucceeded well, toward the End of *April* ſome of them will begin to Flower: You muſt therefore look over them carefully every other Day; and when you ſee the Flower plainly appear, break down ſome of the inner Leaves over it to guard it from the Sun, which would make the Flower yellow and unſightly, if expoſed thereto; and when you find the Flower at its full Bigneſs (which you may know by its Outſide, parting, as if it would run), you muſt then draw it out of the Ground, and not cut them off, leaving the Stalk in the Ground, as is by ſome practiſed; and if they are deſigned for preſent Uſe, you may cut them out of their Leaves; but if deſigned to keep, you ſhould preſerve their Leaves about them, and put them into a cool Place: The beſt Time for pulling them, is in a Morning, before the Sun hath exhaled the Moiſture; for Cauliflowers, pulled in the Heat of the Day, loſe that Firmneſs which they have naturally, and become tough.

But to return to our ſecond Crop (the Plants being raiſed and managed as was directed for the early Crop, until the End of *October*); you muſt then prepare ſome Beds, either to be covered with Glaſs Frames, or arched over with Hoops, to be covered with Mats, *&c.* Theſe Beds ſhould have ſome Dung laid at the Bottom, about 6 Inches or a Foot thick, according to the Size of your Plants; for if they are ſmall, the Bed ſhould be thicker of Dung, to bring them forward, and ſo *vice verſa*: This Dung ſhould be beat down cloſe with a Fork, in order to prevent the Worms from finding their Way through it; then lay ſome good freſh Earth about four or five Inches thick thereon, in which put your Plants about two Inches and a Half ſquare, obſerving to ſhade and water them until they have taken freſh Root: But be ſure do not keep your Coverings cloſe; for the Warmth of the Dung will occaſion a large Damp in the Bed, which, if pent in, will greatly injure the Plants.

When your Plants have taken Root, give them as much free open Air as poſſible, by keeping the Glaſſes off in the Day-time, as much as the Weather will permit; and in the Night, or at ſuch times as the Glaſſes require to be kept on, raiſe them up with Bricks or other Props to let in freſh Air, unleſs in froſty Weather; at which Time the Glaſſes ſhould be covered with Mats, Straw, or Peas Haulm, but this is not to be done but in very hard Froſts: Obſerve alſo to guard them againſt great Rain, which in Winter is very hurtful to them, but in mild Weather, if the Glaſſes are kept on, they ſhould be proped to admit freſh Air; and if the under Leaves grow yellow, and decay, be ſure to pick them off; for if the Weather ſhould prove very bad in Winter, ſo that you ſhould be obliged to keep them cloſe covered for 2 or 3 Days together, as it ſometimes happens, theſe decayed Leaves will render the incloſed Air very noxious; and the Plants, inſpiring pretty much at that Time, are often deſtroyed in vaſt Quantities.

In the Beginning of *February*, if the Weather be mild, you muſt begin to harden your Plants by Degrees, that they may be prepared for Tranſplantation; and the Ground where you intend to plant your Cauliflowers out for good (which ſhould be quite open from Trees, *&c.* and rather moiſt than dry), having been well dunged and dug, ſhould be ſown with Radiſhes a Week or Fortnight before you intend to plant out your Cauliflowers: The Reaſon why I mention the ſowing of Radiſhes particularly, is this; *viz.* that if there are not ſome Radiſhes amongſt them, and the Month of *May* ſhould prove hot and dry, as it ſometimes happens, the Fly will ſeize your Cauliflowers, and eat their Leaves full of Holes, to their Prejudice, and ſometimes their Deſtruction; whereas, if there are Radiſhes upon the Spot, the Flies will take to them, and never meddle with the Cauliflowers ſo long as they laſt: Indeed, the Gardeners near *London* mix Spinach with their Radiſh Seed, and ſo have a double Crop; which is an Advantage where Ground is dear, or where Perſons are ſtreightened for Room; otherwiſe it is very well to have only one Crop amongſt the Cauliflowers, that the Ground may be cleared in time.

Your Ground being ready, and the Seaſon good, about the Middle of *February*, you may begin to plant out your Cauliflowers: The Diſtance which is generally allowed by the Gardeners near *London* (who plant other Crops between their Cauliflowers to ſucceed them, as Cucumbers for Pickling, and Winter Cabbages) is every other Row four Feet and a Half apart, and the intermediate Rows two Feet and a Half, and two Feet two Inches Diſtance in the Rows; ſo that in the latter end of *May*, or beginning of *June* (when the Radiſhes and Spinach are cleared off), they put in Seeds of Cucumbers for Pickling, in the Middle of the wide Rows, at three Feet and a Half apart; and in the narrow Rows, plant Cabbages for Winter Uſe, at two Feet two Inches Diſtance, ſo that theſe ſtand each of them exactly in the Middle of the Square between four Cauliflower Plants; and theſe, after the Cauliflowers are gone off, will have full Room to grow, and the Crop be hereby continued in a Succeſſion through the whole Seaſon.

About three Weeks or a Month after your Cauliflowers are planted out, the Radiſhes between them will be fit to hoe; at which Time, when you are hoeing out the Radiſhes, where they are too thick, you ſhould cut off all ſuch as grow immediately about the Cauliflowers, and would prove hurtful to them, by drawing them up tall and weak; and alſo at that Time draw the Earth up to the Stems of the Plants, being careful not to let any get into their Hearts (as was before directed); and when your Radiſhes are fit to pull, be ſure to clear round the Cauliflowers firſt, and keep drawing the Earth up to their Stems as they advance in Height, which will keep their Stems from being hardened by the Weather, and be of ſingular Service to your Plants.

There are many People, who are very fond of watering Cauliflower Plants in Summer; but the Gardeners near *London* have almoſt wholly laid aſide this Practice, as finding a deal of Trouble and Charge to little Purpoſe; for if the Ground be ſo very dry as not to produce tolerable good Cauliflowers without Water, it ſeldom happens, that watering of them renders them much better; and when once they have been watered, if it is not conſtantly continued, it had been much better for them if they never had any; as alſo, if it be given them in the Middle of the Day, it rather helps to ſcald them: So that, upon the Whole, if Care be taken to keep the Earth drawn up to their Stems, and clear them from every thing that grows near them, that they may have free open Air, you will find that they will ſucceed better without than with Water, where any of theſe Cautions are not ſtrictly obſerved.

When your Cauliflowers begin to Flower, you muſt often look over them, to turn down their Leaves, as before directed, to preſerve their Whiteneſs; and when they are full grown, obſerve the former Directions in pulling them, &c. but wherever you meet with an extraordinary good Cauliflower, whoſe Curd is hard and white, and perfectly free from any Frothineſs about the Edges, you ſhould ſuffer it to remain for Seed, keeping the Leaves cloſe down upon it until the Flower hath ſhot out Stems, and then remove the Leaves from them by degrees; but do not expoſe them too much to the open Air at firſt. As the Stems advance, take the Leaves quite away; and when they begin to branch out, fix three pretty ſtrong Stakes, at equal Angles, about it, ſurrounding them with Packthread, &c. to ſupport their Branches, which would be otherwiſe liable to break with the Wind.

When your Pods begin firſt to be formed, if the Weather proves dry, give them a little Water all over (with a Watering Pot that hath a Roſe to it); which will promote the Progreſs of the Seeds, and preſerve them from the Mildew, which is often hurtful to theſe Seeds; and, when the Seed is ripe, cut it off and hang it up to dry, and rub it out as was directed for Cabbage Seed: And although your Flowers do not produce ſo much Seed as thoſe which were of a ſofter or frothy Nature; yet the Goodneſs of ſuch Seeds will ſufficiently recompenſe for the Quantity; and any Perſon who was to purchaſe his Seeds, had better give ten Shillings an Ounce for ſuch Seed than two for the Seeds commonly ſaved for Sale, as the Gardeners about *London* have experienced, who will never buy any Seeds of this Kind, if they do not know how they were ſaved.

But in order to have a third Crop of Cauliflowers, make a ſlender hot Bed in *February*, in which you ſhould ſow the Seeds, covering them a Quarter of an Inch thick with light Mould, and covering the Bed with Glaſs Frames: You ſhould now and then gently refreſh the Bed with Water, obſerving to raiſe the Glaſſes with Bricks, or Props in the Day Time, to let in freſh Air; when the Plants are come up, and have gotten four or five Leaves, prepare another hot Bed to prick them into, which may be about two Inches ſquare; and in the Beginning of *April* harden them by Degrees, to fit them for tranſplanting, which ſhould be done the Middle of that Month, at the Diſtance directed for the ſecond Crop, and muſt be managed accordingly: Theſe (if the Soil is moiſt where they are planted, or the Seaſon cool and moiſt) will produce good Cauliflowers about a Month after the ſecond Crop is gone, whereby their Seaſon will be greatly prolonged.

A 4th Crop of Cauliflowers may be had by ſowing the Seed about the 23d of *May*; and being tranſplanted, as before directed, will produce good Cauliflowers in a kindly Seaſon, and good Soil, after *Michaelmas*, and continue *October* and *November*, and, if the Seaſon permit, often a great Part of *December*. The Reaſon why I fix particular Days for Sowing this Seed is becauſe two or three Days often make a great Difference in the Plants; and theſe are the Days uſually fixed by the Gardeners near *London*, who have found their Crops to ſucceed beſt when ſown at thoſe Times, though one Day, more or leſs, will make no great Odds. I have alſo, in this Edition, altered the Days to the New Style.

BREYNIA. *Plum. N. Gen.* 40. *Lin. Gen.* 566.

This Plant was ſo named by Father *Plumier*, in Honour of Dr. *Breynius*, a learned Botaniſt at *Dantzick*; who publiſhed two Prodromuſes to his Hiſtory of Plants, and one Century in Folio; in which the Plants are curiouſly delineated and engraven.

The *Characters* are,

It hath a ſpreading thick Empalement, cut at the Top into four oval Segments. The Flower hath four oval Petals which ſpread open, and are a little longer than the Empalement. It hath a great Number of ſlender Stamina, longer than the Petals, ſupporting long erect Summits. In the Center is ſituated a ſlender oblong obtuſe Germen, having no Style, but is terminated by a blunt Stigma. The Germen becomes a long ſoft fleſhy Pod opening in two Valves, with one Cell, incloſing a Row of fleſhy Kidney-ſhaped Seeds.

The *Species* are,

1 BREYNIA *foliis oblongo-ovalibus. Prod. Leyd.* 476. Breynia with oblong oval Leaves. *Breynia Elæagni foliis Plum. Nov. Gen.* 40. Breynia with Wild Olive Leaves.

2. BREYNIA *foliis lanceolatis ſerratis, petiolatis.* Breynia with ſawed Spear-ſhaped Leaves, having long Foot Stalks. *Breynia Amygdali foliis latioribus Plum. Nov. Gen.* 40. Breynia with broad Almond Tree Leaves.

The 1ſt Sort grows naturally in moſt of the Sugar Iſlands in *America*. The Seeds were ſent me from *Jamaica*, in 1730, and I have ſince received them from *Antigua*, by the Title of Ratſbean, the Rats being very fond of it, ſo as to eat them upon the Trees while growing.

This, in the Countries where it naturally grows, riſes with an upright Stem, to the Height of twenty five, or thirty Feet, dividing into many Branches at the Top, covered with an Aſh coloured Bark, and cloſely garniſhed with oblong Leaves, ending in a Point; theſe are placed on every Side the Branches without Order, and are of the Conſiſtence of thoſe of the Bay Tree, white on their under Side, but of an Olive Colour on their upper Side, and are very ſmooth and ſhining.

The Flowers are produced in looſe Panicles at the Extremity of the Branches, each ſtanding on a ſeparate Foot Stalk, having an Empalement, compoſed of four oval ſtiff Leaves, which ſpread open in Form of a Croſs, and four purple Petals of the ſame Shape, but longer, which ſpread open alternately between the Leaves of the Empalement. In the Center ariſes the long Germen, attended by a great Number of ſlender purple Stamina, which are ſtretched out a great Length beyond the Petals. After the Flowers decay, the Germen becomes a long, cylindrical, fleſhy Pod, containing three or four Seeds, ſituated at a Diſtance; where each Seed is lodged, the Pod has a large Swelling, but is contracted between them.

The 2d Sort was found at *Campeachy*. This grows to a larger Size than the former, and ſends out many lateral Branches at the Top, which are garniſhed with oblong ſerrated Leaves, ſtanding on pretty long Foot Stalks; theſe are of a much thiner Conſiſtence than thoſe of the other Sort, and are green on both Sides. As this Sort hath not yet flowered in *England*, I can give no Account of their Shape or Colour.

Theſe Plants are both very impatient of Cold; therefore muſt be preſerved in Stoves, otherwiſe they will not live through the Winter in this Climate. They may be propagated by Seeds, which may be obtained from *America*. Theſe Seeds ſhould be ſown on a hot Bed early in Spring, and when the Plants are two Inches high, they ſhould be carefully tranſplanted, each into a ſmall Pot, filled with light rich Earth, and then plunged into a moderate hot bed of Tanners Bark; obſerving to water and ſhade them until they have taken new Root; they ſhould have a moderate Share of Air admited to them, and they will require to be frequently refreſhed with Water during the Summer Seaſon. If the Plants have thriven ſo well as to fill the Pots with their Roots by the Middle of *Auguſt*, they may be then ſhaken out carefully, ſo as to preſerve the Earth to their Roots; and after trimming the Fibres on the Outſide of the Ball of Earth, they ſhould be put into Pots a Size larger, filling them up with light rich Mould, then plunge them again into the hot Bed, to promote their taking good Root before the Autumn is cold. In this Bed they may remain until the End of *September*, when they muſt be placed in the Bark Stove, where, during the Winter Seaſon, they ſhould be kept in a temperate Heat, and often refreſhed with Water, but not in large Quantities at this Seaſon.

As theſe Plants increaſe in Bulk, put them in larger Pots; but be very careful not to over-pot them, which will cauſe the Plants to decline, and, if not timely remedied, will deſtroy them. In Summer theſe Plants ſhould have a large Share of freſh Air, in warm Weather, but they muſt not be placed in the open Air; for if they are not conſtantly preſerved from cold, it will deſtroy them in a ſhort Time. If theſe Directions are duly obſerved, the Plants will make great Progreſs, and, in a few Years, will produce Flowers.

BROMELIA. *Plum.* 46. *Lin.* 356.

The *Characters* are,

It hath a three cornered permanent Empalement, cut into three Parts, upon which the Germen is ſituated. The Flower hath three long narrow Petals, which are erect, each having a Nectarium joined to it above the Baſe. It hath ſix Stamina the Length of the Petals, which are terminated by oblong Summits. The Germen is ſituated below the Receptacle, ſupporting a ſlender Style, crowned by a trifid obtuſe Stigma. The Empalement becomes an oblong Capſule, divided by a Partition in the Middle, to which the Seeds are fixed quite round, theſe are ſmooth and almoſt cylindrical.

The *Species* are,

1. BROMELIA *foliis radicalibus dentato-ſpinoſis caulinis integerrimis. Lin. Sp. Plant.* 286. *Bromelia* with lower Leaves indented, and prickly, and thoſe of the Stalks entire. *Bromelia pyramidata, aculeis nigris. Plum. Nov. Gen.* 46. Pyramidal *Bromelia* with black Spines.

2. BROMELIA *foliis ſerrato-ſpinoſis obtuſis, ſpicis alternis. Lin. Sp.* 285. *Bromelia* with ſawed prickly Leaves, which are obtuſe, and Spikes of Flowers growing alternate. *Bromelia ramoſa & racemoſa foliis Arundinaceis ſerratis. Plum. Nov. Gen.* 46. Branching and ſhrubby *Bromelia* with Reed-like Leaves, which are ſawed.

The 1ſt Sort hath Leaves very like ſome of the Sorts of Aloes, but not ſo thick and ſucculent, which are ſharply indented on their Edges, where they are armed with ſtrong black Spines; from the Center of the Plant ariſes the Flower Stalk, which is near three Feet high, the lower Part of which is garniſhed with entire Leaves, placed alternately at every Joint. The upper Part of the Stalk is garniſhed with Flowers, ſet in a looſe Spike, or Thyrſe, quite round; theſe have three narrow herbaceous Petals, ſiting upon the Germen, and within are ſix ſlender Stamina, with the Style, which are ſhorter than the Petals. Theſe Flowers in the Country where they grow naturally, are ſucceeded by oval Seed Veſſels, having a longitudinal Partition, in the Center of which are faſtened cylindrical Seeds on every Side, which are ſmooth.

The 2d Sort hath ſhorter Leaves than the firſt, which ſtand erect, and are narrow at the Baſe, increaſing in Width gradually to the Top, where they are broadeſt; theſe are ſharply ſawed on their Edges, and are of a deep green Colour. The Flower Stem ariſes from the Center of the Plant, which divides upward into ſeveral Branches, the upper Part of theſe are garniſhed with Spikes of Flowers, which come out alternately from the Side of the Branches, each having a narrow entire Leaf juſt below it, which is longer than the Spike. The Flowers are placed very cloſe on the Spikes, each having three ſhort Petals, ſituated upon the globular Empalement; when theſe decay, the Empalement turns to an oval pointed Seed Veſſel, incloſing Seeds of the ſame Shape with the former.

Both theſe Plants grow naturally in very warm Countries. Father *Plumier*, who gave this Title to the Genus, found them growing in the *French* Iſlands in *America*; and the late Dr. *Houſtoun* obſerved them growing in *Jamaica*, and in ſeveral Parts of the *Spaniſh Weſt-Indies*. The firſt Sort alſo grows on the Coaſt of *Guinea*, from whence I received the Seeds; and the ſecond Sort was ſent me from *St. Chriſtopher's*.

Theſe Plants are propagated by Seeds, which muſt be procured from the Country where they grow naturally, for they do not produce any in *England*. Theſe muſt be ſown in ſmall Pots, filled with light Kitchen Garden Earth, and plunged into a moderate hot Bed of Tanners Bark; the Earth in theſe Pots ſhould be ſprinkled over with Water two or three Times a Week, according to the Heat of the Weather, but muſt not have too much Moiſture. If the Seeds are good, the Plants will appear in about five or ſix Weeks, and in a Month after will be fit to tranſplant, when they ſhould be carefully ſhaken out of the Pots, and each planted in a ſeparate ſmall Pot filled with the ſame Earth as before; then they muſt be plunged again into a moderate hot Bed, obſerving frequently to ſprinkle them over with Water, but be cautious of giving them too much, leſt the Roots ſhould be thereby rotted. During the Summer Seaſon the Plants ſhould have a moderate Share of Air, in Proportion to the Heat of the Weather; and, in Autumn, they muſt be removed into the Bark Stove, and treated in the ſame Manner as the Ananas, or Pine Apple, with which Management they will make good Progreſs; but after the firſt Winter, they may be placed upon Stands in the dry Stove, though they will thrive much better if they are conſtantly kept in the Tan Bed, and treated like the Ananas, and will flower in 3 or 4 Years, whereas thoſe in the dry Stove will not flower in twice that Time.

The other Parts of their Culture is only to ſhift them into freſh Earth when they require it, but they ſhould by no Means be put into large Pots, for they will not thrive if they are over poted, nor muſt they have much Wet, eſpecially in Winter.

Theſe Plants make a pretty Variety in the hot Houſe, ſo thoſe who have Room, may allow a Plant or two of each Sort to have a Place in their Collection of exotics.

BROOM, the common. *See* Spartium.

BROOM, the *Spaniſh*. *See* Spartium and Geniſta.

BROWALLIA. *Lin. Gen. Plant.* 691. *Hort. Cliff.*

The *Characters* are,

The Empalement is tubulous, and of one Leaf, indented at the Top in five unequal Parts. The Flower is Funnel-ſhaped, of one Leaf, having a cylindrical Tube, twice the Length of the Empalement; the upper Part is ſpread open, and divided into five Parts, the upper Segment, or Lip, being a little larger than the others, which are equal; it hath four Stamina included in the Chaps of the Petal, the two upper being very ſhort, and the two under broad, longer, and reflexed to the Mouth of the Tube, which incloſes them; theſe are terminated by ſingle incurved Summits. In the Center is ſituated an oval Germen, ſupporting a ſlender Style the Length of the Tube, crowned by a thick, compreſſed, indented Stigma. The Empalement becomes an oval obtuſe Veſſel with one Cell, opening at the Top in four Parts, and filled with ſmall compreſſed Seeds.

We have but one *Species* of this Genus, *viz.*

BROWALLIA. *Hort. Cliff.* 138. This is the *Dalea. Hort. Chelſ. Ind.* 67. We have no *Engliſh* Name for it. The Title of *Browallia* was given to it by Dr. *Linnæus*, in Honour of Profeſſor *Browall*, of *Amſterdam*.

The Seeds of this Plant, were ſent me from *Panama*, in the Year 1735; which ſucceeded in the *Chelſea* Garden, where it has continued to flower, and produce Seeds every Year; but the Plants are annual, ſo periſh in Autumn; the Seeds muſt be ſown upon a hot Bed in Spring, and the Plants brought forward on another; otherwiſe they will not perfect their Seeds in *England*. Some of theſe Plants may be tranſplanted in *June*, into the Borders of the Flower Garden, where if the Seaſon proves warm, they will flower and perfect Seeds, but leſt theſe ſhould fail, there ſhould be a Plant kept in the Stove. The Plants uſually grow about two Feet high, and ſpread out into lateral Branches on every Side the Stalk; theſe are garniſhed with oval Leaves which are entire, ending in a Point, and have ſhort Foot Stalks. Toward the End of the Branches the Flowers are produced ſingly, upon pretty long Foot Stalks, ariſing from the Wing of the Leaf. Theſe have a ſhort Empalement of one Leaf, which is cut into 5 Parts; out of the Center of the Empalement the Flower ariſes, which is crooked and bent downward; the Top of the Tube is ſpread open, and the Brim, or open Part of the Flower, has ſome Reſemblance to a liped Flower, being irregular; it is of a bright blue Colour, ſometimes inclining to a purple or red, and often there are Flowers of three Colours on the ſame Plant. When theſe fall away, the Germen in the Center becomes an oval Capſule of one Cell, filled with ſmall brown angular Seeds. It flowers in *July*, *Auguſt*, and *September*, and the Seeds are ripe in 5 or 6 Weeks after.

When this Plant was firſt raiſed in the *Chelſea* Garden, I gave it the Title of *Dalea*, in Honour to Mr. *Dale*, an eminent Botaniſt, and a great Friend of Mr. *Ray*'s. By this Title it was delivered to the Royal Society, and printed in the *Philoſophical Tranſactions*, and alſo in the Catalogue of the *Chelſea* Garden: And by the ſame I communicated the Seeds to Doctor *Linnæus*, who afterward changed the Name to *Browallia*, and printed it in the Catalogue of Mr. *Clifford*'s Garden; where there is a Figure of it exhibited.

BRUNELLA, Self-heal. *See* Prunella.

BRUNSFELSIA. *Plum.* 12. This Plant takes its Name from Dr. *Brunsfelſius*, a famous Phyſician.

The *Characters* are,

The Empalement of the Flower is permanent, Bell-ſhaped, and of one Leaf, cut into five blunt Segments at the Top. The Flower is of one Leaf, and Funnel-ſhaped, having a long Tube, but ſpreads open at the Top, where it is divided into five obtuſe Segments; it hath five Stamina the Length of the Tube, which are inſerted in the Petal, and terminated by oblong Summits. In the Center is placed a ſmall round Germen, ſupporting a ſlender Style the Length of the Tube, which is crowned by a thick Stigma. The Empalement becomes a globular Berry with one Cell, incloſing a great Number of ſmall Seeds, which adhere to the Skin of the Fruit.

We know but one Species of this Genus, *viz.*

BRUNSFELSIA *flore albo, fructu croceo molli. Plum. Nov. Gen.* 12. Brunsfelſia with a white Flower, and a ſoft Saffron coloured Fruit.

This Plant riſes with a woody Stem, to the Height of eight or ten Feet, ſending out many Side Branches, covered with a rough Bark; theſe are garniſhed with oblong oval Leaves which are entire, and on the lower Part of the Branches come out ſingle, but toward their Extremity, they are placed on every Side, and are unequal in Size. At the Extremity of the Branches, the Flowers are produced, generally three or four together. Theſe are almoſt as large as thoſe of the greater Bindweed; but have very long narrow Tubes, which are hairy; the Brim is expanded in the Form of the *Convolvulus*, but is deeply divided into five obtuſe Segments, which are indented on their Border. After the Flower is paſt, the Empalement turns to a round ſoft Fruit, incloſing many oval Seeds, which are ſituated cloſe to the Cover or Skin, to which they adhere.

This Plant grows naturally in moſt of the Sugar Iſlands in *America*, in which Places they call it *Trumpet Flower*; in the *Engliſh* Gardens, it is very rare; it may be propagated from Seeds, which ſhould be ſown early in the Spring in Pots filled with light Earth, and plunged into a hot Bed of Tanners Bark, obſerving to water the Earth as often as you find it neceſſary. When the Plants are come up, they ſhould be tranſplanted each into a ſmall Pot filled with freſh light Earth, and plunged into the hot Bed again, obſerving to water and ſhade the Plants until they have taken Root; after which they muſt have Air admited to them every Day in Proportion to the Warmth of the Seaſon. When the Plants have advanced ſo high as not to be contained in the Frames, they ſhould be removed into the Bark Stove, where, during the Summer Months, they ſhould have a large Share of free Air; but in Winter they muſt be kept very cloſe. With this Management the Plants will be very ſtrong, and produce their Flowers every Seaſon. Theſe Plants may alſo be increaſed by planting their Cutings in the Spring, before they put out, in Pots filled with freſh light Earth, and plunged into a hot Bed of Tanners Bark; obſerving to Water and ſhade them until they have taken Root; after which they muſt be managed as hath been directed for other tender Exotick Plants from the ſame Countries.

BRUSCUS. *See* Ruſcus.

BRYONIA, Bryony.

The *Characters* are,

It hath male and female Flowers on the ſame Plant. The male Flowers have an Empalement of one Leaf, which is Bell-ſhaped, and indented in five Parts at the Top. The Flower is Bell-ſhaped, adhering to the Empalement, and cut into five Segments. It hath three ſhort Stamina and five Summits, two of the Stamina having double Summits, and the other one. The female Flowers ſit upon the Germen, and have a deciduous Empalement, but the Petal is the ſame with thoſe of the male. The Germen which is under the Flower, ſupports a trifid ſpreading Style, crowned by a ſpreading indented Stigma. The Germen becomes a ſmooth globular Berry, containing oval Seeds adhering to the Skin.

The *Species* are,

1. BRYONIA *foliis palmatis utrinque calloſo-ſcabris. Hort. Cliff.* 453. Bryony with palmated Leaves, which are rough and callous on both Sides. This is the *Bryonia aſpera, ſive alba baccis rubris. C. B. P.* 297. Rough or white Bryony with red Berries.

2. BRYONIA *Africana laciniata, tuberoſa radice, floribus herbaceis. Par. Bat.* 107. *African* tuberous rooted Bryony, with indented Leaves and an herbaceous Flower.

3. BRYONIA *foliis palmatis ſuprà calloſo-punctatis. Hort. Cliff.* 453. Bryony with palmated Leaves, whoſe upper Sides are callous and ſpoted. This is the *Bryonia Cretica maculata. C. B. P.* 297. Spoted Bryony of *Crete.*

4. BRYONIA *olivæ fructu rubro. Plum. Cat.* Bryony with a red Olive-ſhaped Fruit.

5. BRYONIA *Americana fructu variegato. Dillen. American* Bryony with a variegated Fruit.

6. BRYONIA *foliis palmatis quinquepartitis hirſutis, laciniis obtuſis.* Briony with hairy palmated Leaves divided into five Parts, and obtuſe Segments. This is the *Bryonia Bonarienſis fici folio. Hort. Elth.* 58. Bryony of *Buenos Ayres,* with a Fig Tree Leaf.

The 1ſt Sort grows upon dry Banks, under Hedges, in many Parts of *England*; but may be cultivated in a Garden for Uſe, by ſowing the Berries in Spring, in a dry poor Soil; where they will in two Years, grow to be large Roots, provided they are not too cloſe. The Roots of this Plant have been formerly, by Impoſtors, brought into a human Shape, and carried about the Country, and ſhewn for Mandrakes to the common People, who were eaſily impoſed on by their Credulity. The Method which theſe People practiſed, was to find a young thriving Bryony Plant, then they opened the Earth all round the Plant, being careful not to diſturb the lower Fibres; and (being prepared with ſuch a Mould, as is uſed by the People who make Plaſter Figures) they fixed the Mould cloſe to the Root, faſtening it with Wire, to keep it in its proper Situation; then they filled the Earth about the Root, leaving it to grow to the Shape of the Mould, which in one Summer it will do; ſo that if this be done in *March,* by *September* it will have the Shape. The Leaves of this Plant are alſo often impoſed on the People in the Market for Mandrake Leaves, although there is no Reſemblance between them, nor any Agreement in Quality.

The 2d and 4th Sorts are perennial Plants, their Roots remaining ſeveral Years, but their Branches decay every Winter. Theſe Roots muſt be planted in Pots filled with freſh light Earth, and in Winter muſt be placed in the Green-houſe, to protect them from Froſt, and great Rains; which would deſtroy them, if expoſed thereto. During the Winter they ſhould have very little Water, but in Summer, when they are expoſed to the open Air, they muſt be frequently refreſhed with Water in dry Weather. Theſe Plants will flower in *July,* and in warm Summers will perfect their Seeds.

The 3d, 5th, and 6th Sorts, are annual Plants; theſe muſt be raiſed on a hot Bed early in Spring, and when the Plants are about three Inches high, they ſhould be each tranſplanted into a ſmall Pot filled with freſh light Earth, and plunged into a hot Bed of Tanners Bark, obſerving to water and ſhade them until they have taken Root. When the Plants are grown ſo large, as to ramble about on the Surface of the Bed, and begin to entangle with other Plants, they ſhould be ſhifted into larger Pots, and placed in the Bark Stove, where their Branches may be trained to the Wall, or againſt an Eſpalier, that they may have Sun and Air, which is abſolutely neceſſary for their producing Fruit. When theſe Plants are full of fruit, they make a pretty Variety in the Stove.

The 2d and 4th Sorts are alſo propagated from Seeds, which ſhould be ſown on a hot Bed; when the Plants are fit to tranſplant, they ſhould be put into Pots; and after they have taken Root, ſhould be inured to bear the open Air by Degrees; where they may remain during the Summer Seaſon, but in Winter they muſt be ſheltered: The 4th Sort ſhould have a moderate Warmth in Winter, being much tenderer than the former.

The common Bryony when the Plants are young, are many of them entirely male, having no female Flowers upon them; but after two or three Years, they will produce Flowers of both Sexes. I have tranſplanted ſome of the young Plants ſingly, at a Diſtance, in order to try if the female Flowers would produce Fruit without the Aſſiſtance of the male; but one of theſe Plants produced only male Flowers for two Years, after which I obſerved many female Flowers upon it, which produced good Seeds, and have continued ſo to do annually. I have obſerved the ſame in Mulberry Trees, which, when young, have for ſeveral Years produced only male Flowers or Katkins, but have afterward produced both Sexes, and borne good Fruit.

BRYONIA NIGRA. *See* Tamnus.

BUBON. *Lin. Gen. Plant.* 312. *Apium. C. B.* 154. *Ferula. Herm. Par.* 163. *Macedonian* Parſley.

The *Characters* are,

It hath an umbelliferous Flower ; the greater, or general Umbel, is compoſed of about ten ſmaller, thoſe which are ſituated in the Middle being the ſhorteſt ; the ſmall Umbels have near twenty Rays. The general Involucrum hath five pointed Spear-ſhaped Leaves, which ſpread open and are permanent ; thoſe of the ſmaller Umbels, conſiſt of many little Leaves of the ſame Length with the Umbel : The Empalement of the Flower is permanent, ſmall, and indented in five Parts ; the Flower is compoſed of five Spear-ſhaped Petals, which turn inward ; it hath five Stamina the Length of the Petals, terminated by ſingle Summits. The oval Germen is ſituated below the Flower, ſupporting two briſtly Styles which are parmanent, and the Length of the Stamina crowned by obtuſe Stigma. The Germen becomes an oval channeled hairy Fruit, dividing in two Parts, each having an oval Seed, plain on one Side, but convex on the other.

The *Species* are,

1. BUBON *foliolis rhombeo-ovatis crenatis, umbellis numeroſiſſimis. Hort. Cliff.* 95. *Bubon* with oval rhomboid crenated Leaves, and many Umbels. This is the *Apium Macedonicum. C. B.* p. 154. And *Petroſelinum Macedonicum. Lob. Icon.* 708. *Macedonian* Parſley.

2. BUBON *foliolis linearibus. Bubon* with very narrow Leaves. This is the *Ferula durior ſive rigidis & breviſſimis foliis. Bocc. Muſ.* 2. 84. Hard or rigid *Ferula,* with very ſhort Leaves.

3. BUBON *foliolis rhombeis ſerratis glabris, umbellis paucis. H.C.* 96. *Bubon* with rhomboid Leaves ſmooth, ſawed, and few Umbels. This is the *Ferula Africana galbanifera folio & facie liguſtici. Par. Bat. African Ferula* bearing Galbanum, with a Lovage Leaf.

4. BUBON *foliolis glabris inferioribus rhombeis ſerratis, ſuperioribus pinnatifidis tridentatis. Prod. Leyd.* 100. This is the *Ferula Africana galbanifera folio myrrhidis. Hort. Amſt.* p. 115. Galbanum-bearing *African Ferula,* with the Mock Chervil Leaf.

The 1ſt ſends out many Leaves from the Root, the lower growing almoſt horizontally, ſpreading near the Surface of the Ground : The Foot Stalk of each Leaf divides into ſeveral other ſmaller, which are garniſhed with ſmooth Rhomb-ſhaped Leaves, which are of a bright pale green Colour, and ſawed on their Edges. In the Center of the Plant ariſes the Flower Stem, which is little more than a Foot high, dividing into many Branches, each being terminated by an Umbel of white Flowers, which are ſucceeded by oblong hairy Seeds. It flowers in *July,* and the Seeds ripen in Autumn, ſoon after which the Plant decays.

This Plant in warm Countries is biennial, the Plants which riſe from Seeds one Year, produce Flowers and Seeds the next, and then periſh : But in *England,* they ſeldom flower till the third or fourth Year from Seed ; but whenever the Plant flowers, it always dies.

It is propagated by Seeds, which ſhould be ſown on a Bed of light ſandy Earth in *April* ; and if the Seaſon prove warm and dry, the Ground ſhould be ſhaded in the Heat of the Day, and frequently refreſhed with Water, which is a ſure Method to bring up the Plants ; where this is not practiſed, the Seeds often fail, or remain long in the Ground. When the Plants come up, they require no other Care but to be kept clean from Weeds, till the Beginning of *October,* when they ſhould be carefully taken up, and planted in a warm Border of dry Ground ; and a few of them ſhould be put into Pots, that they may be ſheltered under a Frame in Winter ; for in ſevere Froſt, thoſe which are expoſed to the open Air, are frequently killed ; though, in moderate Winters, they will live abroad without covering ; but it is a ſecure Way to preſerve the Species, to keep 2 or 3 Plants in Pots, in Shelter, during the Winter. The Seed of this Plant is one of the Ingredients in *Venice* Treacle.

The 2d Sort grows naturally in *Sicily,* from whence I received the Seeds: This is a low perennial Plant, having ſhort ſtiff Leaves, which are very narrow : The Flower Stalk riſes near a Foot high, which is terminated by an Umbel of ſmall white Flowers which are ſucceeded by ſmall oblong channeled Seeds. It flowers in *June,* and the Seeds ripen in *September.* It is propagated by Seeds, and ſhould have a dry Soil and a warm Situation, where the Plants will continue ſeveral Years. It is a Plant of little Beauty or Uſe, ſo is only preſerved for the Sake of Variety.

The 3d Sort is by *Tournefort* titled, *Oreoſelinum Africanum Galbaniferum frutescens aniſi folio. African* ſhrubby galbaniferous Mountain Parſley, with an Aniſe Leaf.

This Plant riſes with an upright Stalk, to the Height of 8 or 10 Feet, which at Bottom is woody, having a purpliſh Bark, covered with a whitiſh Powder, which comes off when handled ; the upper Part of the Stalk is garniſhed with Leaves at every Joint, the Foot Stalks half embracing them at their Baſe : The Foot Stalks branch out into ſeveral ſmaller, like thoſe of the common Parſley, and are ſet with Leaves like thoſe of Lovage, but ſmaller, and of a grey Colour ; the Top is terminated by an Umbel of yellow Flowers, ſucceeded by oblong channeled Seeds, which have a thin Membrane or Wing on their Border. It flowers in *Auguſt,* but hath not produced Seeds in *England.* When any Part of the Plant is broken, there iſſues out a little thin Milk of a Cream Colour, which hath a ſtrong Scent of Galbanum.

The 4th Sort, like the 3d, riſes with a ligneous Stalk, about the ſame Height, and is garniſhed with Leaves at each Joint, which branch out like the former ; but the ſmall Leaves or Lobes are narrow and indented, like thoſe of Baſtard Hemlock. The Stalk is terminated by an umbel of ſmall yellow Flowers, which are ſucceeded by Seeds like thoſe of the former Sort.

Theſe Plants are both Natives of *Africa.* I received the Seeds of them from the *Cape of Good Hope,* which ſucceeded in the Garden at *Chelſea.*

They are propagated by Seeds, which ſhould be ſown in Pots filled with light loamy Earth, as ſoon as they arrive ; which, if it happens toward Autumn, ſhould be plunged into a Bed of Tanners Bark, where the Heat is gone, and ſcreened from Froſt in Winter. In Spring the Plants will come up, and by the Middle of *April* will be fit to remove, when they ſhould be carefully ſhaken out of the Pots, being careful not to tear off their Roots, and plant them each into a ſmall Pot filled with the ſame Earth as before ; then plunge the Pots into the Tan again, and water them to ſettle the Earth to the

Roots of the Plants, and ſhade them from the Sun in the Day Time, until they have taken new Root; after this they muſt be inured gradually to bear the open Air; into which they ſhould be removed in *June*, and placed with other exotick Plants in a ſheltered Situation, where they may remain till Autumn, when they muſt be removed into the Green-houſe, and placed where they may enjoy as much of the Sun and Air as poſſible, but defended from Froſt.

In Winter theſe Plants ſhould have but little Water given them, for much Wet is very injurious to them: In Summer, when they are expoſed to the open Air, they muſt be frequently refreſhed with Water in dry Weather; but at no Time ſhould have too much Wet, for that will rot their Roots.

Theſe Plants make a pretty Variety in the Green-houſe in Winter, and when they are placed abroad in the Summer with other Green-houſe Plants, they have a good Effect, eſpecially when they are grown to a large Size. They generally flower the third Year from Seeds, but their Flowers are produced ſo late in Summer, that the Seeds have not Time to form before the Cold comes on in the Autumn; in warm Summers, the Plants may perfect their Seeds, if they ſtand in a warm ſheltered Situation.

The Galbanum of the Shops is ſuppoſed to be procured from both theſe Sorts indifferently; for upon breaking their Leaves, the Juice which flows out from the Wound, hath a ſtrong Odour of the Galbanum.

BUCKSHORN, or HARTSHORN. *See* Plantago.

BUDDING. *See* Inoculating.

BUDDLEJA. *Houſt. Mſſ. Lin. Gen. Plant.* 131.

The *Characters* are,

It hath a ſmall permanent Empalement, ſlightly cut at the Top into five acute Parts. The Flower is one Leaf, Bell-ſhaped, and quadrifid, the Petal being ſtretched out beyond the Empalement; it hath four ſhort Stamina, placed at the Diviſions of the Petal, terminated by ſhort Summits. The oblong Germen is ſituated in the Center, ſupporting a ſhort Style, crowned by an obtuſe Stigma; the Germen becomes an oblong Capſule, having two Cells filled with ſmall Seeds.

The *Species* are,

1. BUDDLEJA *foliis ovatis ſerratis oppoſitis ſubtus piloſis, floribus ſpicatis racemoſis, caule fruticoſo. Buddleja* with oval ſawed Leaves, growing oppoſite, which are hairy on their under Side, and Yellow Flowers growing in branching Spikes, and a ſhrubby Stalk.

2. BUDDLEJA *foliis lanceolatis acuminatis integerrimis oppoſitis, ſpicis interruptis, caule fruticoſo ramoſo. Buddleja* with pointed Spear-ſhaped Leaves which are entire, and placed oppoſite, broken Spikes, and a branching ſhrubby Stalk. *Buddleja fruteſcens foliis oblongis mucronatis, floribus ſpicatis albis. Houſt. Mſſ.* Shrubby *Buddleja* with white Flowers growing in Spikes.

The 1ſt Sort grows naturally in *Jamaica*, and moſt of the *American* Iſlands, where it riſes to the Height of ten or twelve Feet, with a thick woody Stem, covered with a grey Bark; this ſends out many Branches toward the Top, which come out oppoſite; as are alſo the Leaves, which are oval, and covered on their under Side with a brown hairy Down. At the End of the Branches the Flowers are produced in long cloſe Spikes, branching out in Cluſters, which are yellow, conſiſting of one Leaf, cut into four Segments; theſe are ſucceeded by oblong Capſules, filled with ſmall Seeds. This had the Title of *Buddleja*, in Memory of Mr. *Buddle*, an eminent *Engliſh* Botaniſt.

The 2d Sort was ſent me from *Carthagena*, where it grows naturally. This is the *Ophioxylon Americanum, foliis oblongis mucronatis, leviter ſerratis bardanæ inſtar, ſubtus lanuginoſis. Pluk. Alm.* 270.

This Sort riſes much taller than the firſt, and divides into a great Number of ſlender Branches, covered with a Ruſſet hairy Bark, and garniſhed with long Spear-ſhaped Leaves, ending in ſharp Points: Theſe grow oppoſite at every Joint; at the End of the Branches are produced branching Spikes of white Flowers, growing in Whorls round the Stalks, with ſmall Spaces between each. This hath long narrow Spear-ſhaped Leaves growing between the Spikes; but thoſe of the other Sort are naked. The Leaves are much thiner than thoſe of the firſt Sort, and have ſcarce any Down on their under Side, the Spikes of Flowers grow more erect, ſo form a large looſe Spike at the End of every Branch.

Theſe Plants grow naturally in Gullies or other low ſheltered Spots in the *Weſt-Indies*, their Branches being too tender to reſiſt the Force of ſtrong Winds, ſo are rarely ſeen in open Situations.

They are propagated by Seeds, which ſhould be obtained from the Countries where they naturally grow, for they do not perfect them in *England*. Theſe ſhould be brought over in their Capſules or Pods, for thoſe which are taken out before they are ſent ſeldom grow. They ſhould be ſown in ſmall Pots, filled with rich light Earth, and very lightly covered with the ſame; for as theſe Seeds are very ſmall, ſo if they are buried deep in the Ground, they periſh. The Pots ſhould be plunged into a moderate hot Bed, and muſt be every 3d or 4th Day gently watered, being very careful not to waſh the Seeds out of the Ground, by too haſty watering them. If the Seeds are freſh and good, the Plants will come up in about ſix Weeks; and if they grow kindly, will be large enough to tranſplant in about a Month after. Then they ſhould be carefully ſeparated, and each planted in a ſeparate ſmall Pot, filled with light rich Earth, and plunged into the hot Bed again, obſerving to ſhade them from the Sun until they have taken new Root, as alſo to refreſh them with Water, when they require it, but it muſt not be given in too large Quantities; for much Wet will certainly kill them, eſpecially when young, as I have too often experienced. After the Plants have taken freſh Root in the Pots, there ſhould be freſh Air admitted to them every Day, in Proportion to the Warmth of the Seaſon; they muſt alſo be frequently, but moderately, refreſhed with Water. If the Plants thrive well, they will have filled theſe ſmall Pots with their Roots by the Middle of *Auguſt*, at which Time it will be proper to ſhift them into Pots one Size larger, that they may have Time to take good Root again, before the cold Weather comes on. When theſe are new potted, the Tan ſhould be turned over, to renew the Heat, and if it is wanted, ſome freſh Tan muſt be added to the Bed, to encourage the Roots of the Plants. In this Bed they may remain till Autumn, when they muſt be removed into the Stove, and plunged into the Tan Bed; where they muſt conſtantly remain,

main, for they are too tender to thrive in this Country, if they are not ſo treated. During the Winter they muſt have but little Water, and ſhould be kept warm; but in Summer they ſhould have freſh Air admitted to them conſtantly when the Weather is warm, and frequently ſprinkled all over with Water. With this Management, the Plants will flower the 4th Year from Seeds, and every Year after; they make a good Appearance in the Stove.

BUGLOSSUM. *See* Anchuſa, *and* Lycopſis.

BUGULA. *Tourn. Inſt. R. H.* 208. *Tab.* 98. *Ajuga. Lin. Gen. Plant.* 624. Bugle.

The *Characters* are,

It hath a ſhort permanent Empalement of one Leaf, which is ſlightly cut into five Parts; the Flower is of one Leaf, and of the Lip Kind, having an incurved cylindrical Tube, the upper Lip is very ſmall, erect, and bifid; the under Lip or Beard is large, open, and divided into three obtuſe Segments, the Middle being large, and the two Sides ſmall; it hath four erect Stamina, two of which are longer than the upper Lip, and two ſhorter, terminated by double Summits. In the Center is ſituated the four Germen, ſupporting a ſlender Style the Length of the Stamina, and crowned by two ſlender Stigma. The Germen afterward become four naked Seeds incloſed in the Empalement.

The *Species* are,

1. Bugula *foliis caulinis ſemiamplexicaulibus, ſtolonibus reptatricibus.* Bugle whoſe Leaves half embrace the Stalks, and Shoots which put out Roots. Common Bugle; by *Linnæus* it is titled *Ajuga ſtolonibus reptatricibus. Sp. Plant.* 562.

2. Bugula *foliis oblongo-ovatis, caulibus decumbentibus, verticillis diſtantibus.* Bugle with oblong oval Leaves, declining Stalks, and the Whorls of Flowers wide aſunder. *Bugula folio maximo flore pallide cæruleo. Boerh. Ind.* Bugle with a large Leaf, and pale blue Flower; and the *Bugula Alpina maxima. Tourn. Inſt.*

3. Bugula *foliis obtuſe-dentatis, caule ſimplici.* Bugle with blunt indented Leaves, and a ſingle Stalk. This is the *Ajuga tetragono pyramidalis. Lin. Sp. Plant.* 561. *Ajuga* with a ſquare pyramidal Spike.

4. Bugula *foliis oblongis tomentoſis, calycibus hirſutis.* Bugle with oblong woolly Leaves, and hairy Flower Cups. This is the *Bugula carneo flore. Cluſ. Hiſt.* 2. *p.* 43. Bugle with a Fleſh coloured Flower.

5. Bugula *villoſa, foliis ovato-dentatis ſeſſilibus, floribus reſupinatis.* Hairy Bugle with oval indented Leaves, placed cloſe to the Stalks, and inverted Flowers. This is the *Bugula orientalis villoſa flore inverſo candido cum oris purpureis. Tourn. Cor.* 14. Hairy Eaſtern Bugle with an inverted white Flower, having a purple Rim.

The 1ſt Sort grows naturally in Woods, and ſhady moiſt Places, in moſt Parts of *England*, where it ſpreads and increaſes greatly by the Side Shoots, which put out Roots at their Joints. There are two Varieties of this, one with a white, and the other a pale purple Flower, which I obſerved growing in ſeveral Parts of *Weſtmoreland*; but theſe do not differ in any other Reſpect than in the Colour of their Flowers from the common, therefore I have only mentioned them as Varieties.

The common Bugle is greatly eſteemed as a vulnerary Herb, and is uſed both internally and externally; it enters as an Ingredient into the vulnerary Decoctions of the Surgeons, and is externally applied to Ulcers. This is conſtantly mixed with the vulnerary Herbs, imported from *Switzerland*. It is titled *Conſolida Media*, or Middle Confound. As this grows naturally wild in great Plenty, ſo it is ſeldom admitted into Gardens.

The 2d Sort grows naturally on the *Alps*, the Leaves are much longer than thoſe of the common Bugle, the Stalks are weaker, and decline on every Side, and the Whorls of Flowers much ſmaller, and ranged at a greater Diſtance. This is admitted into ſome Gardens for Variety, and propagates in Plenty by its trailing Stalks. This requires a moiſt ſhady Situation.

The 3d Sort grows naturally in *France* and *Germany*, but is not a Native in *England*. This grows about 4 or 5 Inches high, with a ſingle Stalk, which is garniſhed with Leaves at each Joint, placed oppoſite; theſe are oval, and indented bluntly on their Edges. The Flowers grows in Whorls round the Stalks, and toward the Top form a cloſe thick Spike, of a fine blue Colour.

The 4th Sort grows naturally in many Parts of *Europe*. This reſembles the common Bugle, but the Leaves are woolly, and the Flower Cups very hairy, in which the chief Difference conſiſts. There are two Varieties of it, one with a white, and the other a red Flower.

The 5th Sort was brought from the *Levant* by Dr. *Tournefort*, and is preſerved by the curious in collecting rare Plants. There are two or three Varieties of it, which only differ in the Colour of their Flowers.

This Sort requires a little Protection in Winter, therefore the Plants ſhould be planted in Pots filled with a loamy Soil, and placed in a ſhady Situation in Summer; in Winter they muſt be removed under a common Frame, where they may enjoy as much free Air as poſſible in mild Weather; but in hard Froſt ſhould be covered, otherwiſe they will not live through the Winter, unleſs it proves very favourable. This may be propagated by Seeds, which ſhould be ſown ſoon after it is ripe, in a Pot filled with loamy Earth, and placed in a ſhady Situation till Autumn, when it ſhould be removed under a Frame, where it may be ſcreened from hard Froſt. In the Spring the Plants will come up, which ſhould be tranſplanted into ſeparate Pots as ſoon as they are ſtrong enough to remove, and, in Summer, placed in the Shade, and treated as the old Plants. It flowers in *May*, and the Seeds ripen the latter End of *July*. It may alſo be increaſed by Offſets, but this is a ſlow Method, becauſe the Plants put out but few of them, eſpecially while they are young, ſo the other Method is chiefly practiſed.

All the other Sorts are hardy enough, and are eaſily multiplied by their Side Shoots, theſe delight in a moiſt ſhady Situation, where they are apt to ſpread too much, eſpecially the two firſt Sorts.

BULB [*Bulbus*, *Lat.* of Βολβὸς, *Gr.*] Bulbous Roots are of two Sorts, *viz.* tunicated (or coated) and ſquamous (or ſcaly). A tunicated Root conſiſts of many Coats, involving each other; as the Onion, Tulip, &c. whoſe Roots, if cut through the Middle, plainly ſhew the ſeveral Coats. A ſquamous Root conſiſts of many Scales, lying over each other like Tiles upon a Houſe, or Scales on Fiſh; as the Lily, Martagon, &c.

BULBINE. *See* Anthericum.

BULBOCASTANUM, *See* Bunium.

BULBOCODIUM. *Tourn. Lin. Gen. Plant.* 368.

The *Characters* are,

The Flower hath no Empalement, it is Funnel ſhaped, and compoſed of ſix Petals, which are concave, having long narrow Necks, connected at the Mouth, but are Spear-ſhaped above. It hath ſix Awl-ſhaped Stamina, ſhorter than the Petals, and are inſerted in the Middle, having incumbent Summits. It hath an oval, blunt, three cornered Germen, ſupporting a ſlender Style, crowned by three oblong erect Stigma. The Germen becomes a triangular pointed Capſule, having three Cells filled with angular Seeds.

The *Species* are,

1. Bulbocodium *foliis ſubulato-linearibus. Prod. Leyd.* 41. *Bulbocodium* with narrow Awl-ſhaped Leaves. This is the *Bulbocodium Alpinum juncifolium flore unico intus albo extus ſquallide rubente. Raii. Syn. Ed.* 3. p. 374. *Alpine* Ruſh-leaved *Bulbocodium* with a ſingle Flower, white on the Inſide, but of a dirty red on the Outſide.

2. Bulbocodium *foliis lanceolatis. Bulbocodium* with Spear-ſhaped Leaves. This is the *Colchicum vernum Hiſpanicum. B. C. P. Spaniſh* Spring Meadow Saffron.

The firſt Sort grows naturally upon the *Alps*, and alſo upon *Snowdon*, in *Wales*. This hath a ſmall bulbous Root, covered with a rough hairy Skin; it ſends out a few long narrow Leaves, ſomewhat like thoſe of the Saffron, but narrower; in the Middle of theſe the Flower comes out, which ſtands on the Top of the Foot Stalk, growing erect, and is ſhaped like thoſe of the Crocus, but ſmaller; the Foot Stalk riſes about three Inches high, and hath four or five ſhort narrow Leaves placed alternately below the Flower. This flowers in *March*, and the Seeds are ripe in *May*, when in a Garden, but where it grows naturally it is much later.

The ſecond Sort grows naturally in *Spain*, but hath been long cultivated in Gardens. It hath a bulbous Root, ſhaped like thoſe of the Snowdrop, covered with a brown Skin, which ſends out three or four Spear-ſhaped concave Leaves, between which comes out the Flower, ſtanding on a very ſhort Foot Stalk, and is compoſed of ſix Petals, three ſtanding on the Outſide, and three within between the other; theſe, when they firſt appear, are of a pale Colour, but afterward change to a bright purple; when theſe decay, they are ſucceeded by triangular Seed Veſſels, full of ſmall roundiſh Seeds. It produces Flowers in *March*.

Theſe Plants are propagated by Offſets. The Time to remove them, is ſoon after their Leaves decay, but the Roots may be kept out of the Ground two Months without Prejudice at that Seaſon. They ſhould not be removed oftener than every third Year, for their Roots do not multiply very faſt, ſo by ſuffering them to remain, they will flower much ſtronger, and make a greater Increaſe than if they are often taken up.

The firſt Sort requires an eaſtern Aſpect, for if it hath too much Sun, it will not thrive; but the 2d ſhould have a warmer Situation, ſo may be planted in a South Border, and they ſhould have a freſh loamy Soil, but not dunged. They may alſo be propagated by Seeds, ſown in Pots filled with freſh loamy Earth in *September*, and the latter End of *October*, the Pots ſhould be placed under a Frame, to protect them from ſevere Froſt; in Spring the Plants will appear, when they may be removed out of the Frame, and placed where they may have the Morning Sun, but ſcreened from the South. In very dry Weather, they ſhould be refreſhed now and then with a little Water, while their Leaves continue green, but, when theſe decay, the Pots ſhould be removed to a ſhady Situation, where they may remain till Autumn, obſerving to keep them clean from Weeds. In *October* there ſhould be a little freſh Earth laid on the Surface of the other, and the Pots placed in ſhelter again till the following Spring, when they muſt be treated as in the former Year till their Leaves decay, then the Roots ſhould be carefully taken up, and tranſplanted into the Borders of the Flower Garden, treating them as the old Roots; the Spring following they will produce their Flowers.

BUNIAS. *Lin. Gen. Plant.* 737.

The *Characters* are,

The Empalement is compoſed of four oblong ſpreading Leaves, which fall away. The Flower hath four Petals, placed in Form of a Croſs, which are oval, and double the Length of the Empalement, joined at their Baſe, and erect. It hath ſix Stamina, the Length of the Cup, two of which are oppoſite, and ſhorter than the other, terminated by erect Summits, which are bifid at their Baſe. In the Center is ſituated an oblong Germen, having no Style, but crowned by an obtuſe Stigma. The Germen afterward becomes an irregular ſhort oval Pod, with four Angles, one of which is prominent and pointed, incloſing one or two roundiſh Seeds.

The *Species* are,

1. Bunias *ſiliculis ovatis gibbis verrucoſis. Lin. Sp. Plant. Bunias* with oval convex Pods, having Protuberances. This is the *Crambe Orientalis dentis leonis folio erucaginis facie. Tourn.* Eaſtern Sea Kale, with Dandelion Leaves, and the Appearance of a Rocket.

2. Bunias *ſiliculis tetragonis angulis bicriſtatis. Lin. Sp. Plant. Bunias* with ſhort four-cornered Pods, whoſe Angles are doubly creſted. This is the *Erucago Monſpeliaca ſiliqua quadrangula echinata. C. B. P.* 99. *Montpelier Erucago* with ſquare echinated Pods.

3. Bunias *ſiliculis ovatis lævibus ancipitibus. Lin. Sp. Plant.* 670. *Bunias* with ſmooth oval Pods, ſtanding on each Side the Stalk. This is the *Eruca maritima Italica, ſiliqua haſtæ cuſpidi ſimili. C. B. P.* 99. *Italian* maritime Rocket, with Pods reſembling the Point of a Spear. *Cakile maritima ampliore folio. Tourn. Cor.* 49.

The firſt Sort grows naturally in the *Levant*, from whence Dr. *Tournefort* ſent the Seeds to the Royal Garden at *Paris*. This hath a perennial Root, and an annual Stalk, which decays in Autumn. It ſends out many oblong Leaves, which ſpread on every Side near the Ground, and are deeply jaged on their Edges, like thoſe of the Dandelion; from between theſe ariſe the Stalks, which grow upwards of two Feet high, ſending out Branches on every Side, garniſhed at each Joint by one oblong ſharp pointed Leaf, eared at the Baſe, where they ſit cloſe to the Stalk. The Branches are terminated by long looſe Spikes of yellow Flowers, compoſed of four Leaves, ſhaped like thoſe of the Cabbage; theſe are ſucceeded by ſhort oval rough Pods, ending in a Point, incloſing one round Seed. It flowers in *June*, and the Seeds are ripe in *September*.

The 2d Sort grows naturally in the South of *France* and *Italy*, this is annual, and ſends out many Branches on every Side, which ſpread, and incline toward the Ground. Theſe are garniſhed with glaucous Leaves, deeply divided into many Parts, almoſt like thoſe of Swines Creſs. The Flowers are produced ſingly from the Wings of the Leaves, toward the Extremity of the Branches; theſe are very ſmall, of a pale yellowiſh Colour, and compoſed of four Petals, placed in Form of a Croſs, which are ſucceeded by ſhort Pods, creſted on each Side, containing one or two roundiſh Seeds.

The 3d Sort grows naturally about *Montpelier*; this alſo is annual, and ſends out many oblong Leaves near the Root, which are deeply cut on each Side, are hairy, and ſpread on the Ground; between theſe ariſe two or three Stalks, which grow a Foot and a Half high, ſending out ſeveral Side Branches, garniſhed with oblong rough Leaves, indented on their Edges; the upper Part of the Branches are deſtitute of Leaves, but have Flowers placed alternately on each Side the Branches, ſtanding on ſhort Foot Stalks, which are purple, and compoſed of four Petals; theſe are ſucceeded by oval pointed Pods, containing one or two roundiſh Seeds; there is a Variety of this with narrow Leaves.

Theſe Plants are all propagated by Seed; the firſt Sort may be ſown the beginning of *April* where the Plants are deſigned to remain; when they come up, they ſhould be thined, leaving them two Feet aſunder, after which they require no other Care but to clean them from Weeds. The ſecond Year they produce Flowers and Seeds; and the Roots abide many Years.

The other two Sorts muſt be ſown where they are to remain, but the beſt Time is in Autumn, becauſe thoſe ſown in Spring often fail, or do not perfect Seeds. Theſe require no other Culture but to keep them clean from Weeds, and thin the Plants to one Foot Diſtance.

BUNIUM. *Lin. Gen. Plant.* 298. *Bulbocaſtanum Tourn. Inſt.* 312. *Tab.* 161. Pig Nut or Earth Nut.

The *Characters* are,

The great Umbel is compoſed of near 20 Rays or ſmall Umbels, which are ſhort, and cloſe together. The Involucrum of the great Umbel, is compoſed of many ſhort narrow Leaves, thoſe of the ſmaller are the ſame, but are as long as the Umbels. The proper Empalement of the Flower is ſcarce diſcernable. The Rays of the great Umbel are uniform. The Flowers have 5 Heart-ſhaped Petals which are equal, and turn inward, they have 5 Stamina ſhorter than the Petals, terminated by ſingle Summits; the oblong Germen is ſituated below the receptacle, ſupporting 2 reflexed Styles, crowned by a blunt Stigma. The Germen becomes an oval Fruit dividing in 2 Parts, containing 2 oval Seeds, plain on one Side, and convex on the other.

The *Species* are,

1. BUNIUM *bulbo globoſo. Sauv. Monſp.* 256. Earth Nut with a globular Root. *Bulbocaſtanum majus, folio Apii. C. B. P.* 162. Greater Earth Nut, with a Parſley Leaf.

2. BUNIUM *radice turbinato.* Earth Nut with a turbinated Root. *Bulbocaſtanum Creticum radice napi-formi Tourn. Cor.* Earth Nut of *Crete*, with a Turnep Root.

3. BUNIUM *foliis tripartitis filiformibus linearibus.* Earth Nut with very narrow tripartite Leaves. *Bulbocaſtanum minus ſaxatile Peucedani folio. Tourn. Inſt.* 312. Smaller Rock Earth Nut with a Sow Fennel Leaf.

The firſt Sort grows naturally in moiſt Paſtures and Woods in many Parts of *England*; of this there is a Variety, ſuppoſed to be larger than that which grows commonly here, but I could never obſerve any eſſential difference between them; for in ſome Places it is found much larger than in others, but when they have been tranſplanted into a Garden, they have proved to be the ſame. This hath a tuberous ſolid Root which lies deep in the Ground, and puts out fibres from the Bottom and Sides. The Leaves are finely cut, and lie near the Ground. The Stalk riſes a Foot and a Half high, which is round, channeled, and ſolid; the lower Part being naked, but above, where it branches out, there is one Leaf placed below every Branch, which are cut into finer Segments than thoſe above: The Flowers are white, and ſhaped like thoſe of other umbelliferous Plants; the Seeds are ſmall, oblong, and when ripe are channeled. It flowers in *May*, and the Seeds ripen in *July*, ſoon after which, the whole Herb decays to the Ground.

The Roots of this ſort are frequently dug up, and eaten raw by the poorer ſort, having much Reſemblance in Taſte to the Cheſtnut, from whence it had the Title of *Bulbocaſtanum.* Theſe Roots when boiled are very delicious, and ſuppoſed to afford great Nouriſhment. The Swine are very fond of theſe, and will root them up, when admited where they grow, and ſoon become fat with feeding on them.

The 2d Sort was diſcovered by Dr. *Tournefort* in the Iſland of *Crete*, but it grows naturally in many Parts of the *Levant.* I received dried Samples and Seeds of this from *Zant*, where it grows plentifully.

The 3d Sort I received from the *Alps.* This is a very low Plant, ſeldom riſing above ſix Inches high.

Theſe Plants delight to grow among Graſs, ſo cannot be made to thrive long in a Garden.

BUPHTHALMUM. *Lin. Gen. Plant.* 876. *Aſteriſcus. Tourn. Inſt. R. H. Tab.* 285. Ox-eye.

The *Characters* are,

The Empalement is different in the ſeveral Species. It hath a compound radiated Flower, compoſed of hermaphrodite and female Florets. The hermaphrodite Flowers compoſe the Diſk; theſe are Funnel-ſhaped, and cut into five Parts at the Brim, which ſpread open, and have five ſlender Stamina which are ſhort, and terminated by cylindrical Summits; in the Center is ſituated on oval compreſſed Germen, ſupporting a ſlender Style, crowned by a thick Stigma. The Female Flowers which compoſe the Rays (or Border) are ſtretched out on one Side like a Tongue, which ſpreads open, and is indented at the Top in three Parts; theſe have no Stamina, but a double headed Germen ſupporting a ſlender Style, crowned by two oblong Stigma. The Germen becomes a ſingle compreſſed Seed, cut on each Side.

The *Species* are,

1. BUPHTHALMUM *calycibus folioſis, foliis cordatis ſerratis trinerviis baſi hinc brevioribus. Hort. Upſal.* 264. Ox-eye with a leafy Empalement, Heart-ſhaped ſawed Leaves, having three Veins, and the Baſe on one Side ſhorter than the other. This is the *Chryſanthemum Scrophulariæ folio Americanum. Pluk. Alm.* 99. *Tab.* 22. f. 1. *American* Corn Marigold, with a Figwort Leaf.

2. BUPHTHALMUM *foliis lanceolatis ſubdenticulatis glabris, calycibus nudis. Hort. Cliff.* 415. Ox-eye with

ſmooth Spear-ſhaped Leaves, (indented below) and naked Empalements. This is the *Aſteroides Alpina ſalicis folio glabro. Tourn. Cor.* 51. *Tab.* 487. Baſtard Aſter of the *Alps*, with a ſmooth Willow Leaf.

3. BUPHTHALMUM *foliis lanceolatis ſubſerratis villoſis calycibus nudis. Hort. Cliff.* 414. Ox-eye with Spear-ſhaped Leaves, ſawed below and hairy, and naked Empalements. *Aſter luteus major. C. B. P.* 266. Greater yellow Starwort, with Leaves like Devil's Bit.

4. BUPHTHALMUM *calycibus acutè folioſis, ramis alternis, folioſis, lanceolatis amplexicaulibus integerrimis. Hort. Cliff.* 414. Ox-eye with acute leafy Empalements, Branches placed alternate, and entire Leaves embracing the Stalks. This is the *Aſteriſcus annuus foliis ad florem rigidis. Tourn. Inſt.* 427. Annual Aſteriſcus, with rigid Leaves under the Flowers.

5. BUPHTHALMUM *calycibus acutis, caulibus glabris, foliis radicalibus oblongo-ovatis obtuſis, petiolis longiſſimis.* Ox-eye with acute Empalements, ſmooth Stalks, and the lower Leaves oblong, oval, and blunt, and very long Foot Stalks. This is the *Aſteriſcus annuus flore minore elatior. Tourn. Inſt.* 497. Taller annual Aſteriſcus, with a ſmaller Flower and rigid Leaves to the Empalement.

6. BUPHTHALMUM *floribus axillaribus calycibus folioſis, ſpinis terminalibus, foliis oblongis obtuſis, ſeſſilibus.* Ox-eye with Flowers coming from the Sides of the Branches, leafy Empalements ending with Spines, and oblong blunt Leaves growing cloſe to the Branches. This is the *Aſteriſcus annuus maritimus patulus. Tourn. Inſt.* 498. Annual ſpreading maritime Aſteriſcus.

7. BUPHTHALMUM *calycibus obtuſè folioſis pedunculatis, ramis alternis, foliis cuneiformibus. Hort. Cliff.* 414. Ox-eye with blunt leafy Empalements, having Foot Stalks, alternate Branches, and Wedge-ſhaped Leaves. This is the *Aſteriſcus maritimus perennis patulus. Tourn. Inſt.* 498. Perennial ſpreading maritime Aſteriſcus.

8. BUPHTHALMUM *calycibus obtuſè folioſis ſeſſilibus axillaribus, foliis oblongis obtuſis. Hort. Cliff.* 414. Ox-eye with blunt leafy Empalements, ſitting cloſe to the Side of the Stalks, and oblong blunt Leaves. This is the *Aſteriſcus annuus Luſitanicus odoratus. Boerh. Ind. alt.* 145. Annual *Portugal* ſweet ſcented Aſteriſcus.

9. BUPHTHALMUM *calycibus obtuſè foliolis pedunculatis, axillaribus, foliis lanceolatis obtuſis.* Ox-eye with a blunt leafy Empalement, having Foot Stalks coming from the Side of the Branches, and blunt Spear-ſhaped Leaves. This is the *Aſteriſcus aquaticus annuus patulus. Tourn. Inſt.* 408. Spreading aquatic annual Aſteriſcus.

10. BUPHTHALMUM *foliis oppoſitis lanceolatis petiolatis bidentatis. Hort. Cliff.* 415. Ox-eye with Spear-ſhaped Leaves growing oppoſite, with Foot Stalks having two Teeth. This is the *Aſteriſcus fruteſcens leucoij foliis ſereceis & incanis. Hort. Elth.* 44. *Tab.* 38. Shrubby Aſteriſcus with a ſilky hoary Stock-Gilliflower Leaf.

11. BUPHTHALMUM *foliis oppoſitis lineari-lanceolatis craſſis, glabris, floribus pedunculatis.* Ox-eye with thick ſmooth, narrow, Spear-ſhaped Leaves growing oppoſite; and Flowers having Foot Stalks. This is the *Aſteriſcus fruteſcens leucoij foliis viridibus & ſplendentibus. Hort. Elth.* 43. *Tab.* 38. Shrubby Aſteriſcus, with green, ſhining, Stock-Gilliflower Leaves.

12. BUPHTHALMUM *foliis oppoſitis lineari-lanceolatis craſſis incanis, floribus ſeſſilibus.* Ox-eye with thick ſmooth, narrow, Spear-ſhaped Leaves placed oppoſite, and Flowers growing cloſe to the Branches. This is the *Aſteriſcus fruteſcens leucoij foliis anguſtiſſimis ſereceis & incanis. Ind. Hort. Chelſ.* 27. Shrubby Aſteriſcus with very narrow, hoary Stock-Gilliflower Leaves.

The firſt Sort grows naturally in *North America*; this hath a perennial Root, and an annual Stalk. From the Roots ariſe many Stalks, in Number proportional to the Size of the Roots; theſe grow upward of three Feet high, and are garniſhed at each Joint with two oblong Heart-ſhaped Leaves placed oppoſite, which have three longitudinal Veins, and the Baſe on one Side ſhorter than the other. The Flowers come out at the Extremity of the Branches, having a leafy Empalement; theſe are radiated and of a bright yellow Colour, reſembling a ſmall Sun Flower, from whence the Inhabitants of *America* have given it that Appellation. It flowers in *July* and *Auguſt*, and when the Autumns prove favourable, the Seeds will ripen in *England*; but as it propagates eaſily by parting the Roots, there are few Perſons ſollicitous about the Seed. The beſt Time to tranſplant and part the Roots, is toward the End of *October*, when the Stalks begin to decay. Theſe ſhould be removed every other Year, to prevent their ſpreading too far; they are very hardy, ſo will thrive in any Situation; but as their Roots are apt to extend on every Side, ſo they are not proper for the Borders of the Flower Garden; but in large Borders on the Sides of rural Walks, or in Spaces between Shrubs, they will be ornamental during their Seaſon of flowering.

The 2d Sort grows naturally on the *Alps*, alſo in *Auſtria*, *Italy*, and the South of *France*. This hath alſo a perennial Root, and an annual Stalk; it grows near two Feet high, with ſlender branching Stalks, which are garniſhed with oblong ſmooth Leaves ending in a Point; the Flowers grow at the Extremity of the Branches, of a bright yellow Colour, and radiated round their Borders like thoſe of Starwort. It flowers in *June* and *July*, and the Seeds ripen in Autumn. There are two or three Varieties of this, differing in the Breadth of their Leaves and Size of their Flowers, but all theſe have been produced from the ſame Seeds.

This Sort is propagated by parting the Roots, which may be performed at the ſame Time, as directed for the 2d Sort. As this doth not ſpread ſo much, a few Roots may be allowed Room in the Borders of the Flower Garden, which have little Sun, where they will continue a long Time in flower.

The 3d Sort is ſomewhat like the 2d, but the Leaves are broader and obtuſe; the Stalks and Leaves are alſo hairy, in which conſiſts their Difference. This flowers at the ſame Time, and is propagated as the former.

The 4th and 5th Sorts have been ſuppoſed only Varieties of each other, but from many Years Experience, I could never find that either of them altered. The under Leaves of the fifth Sort have much longer Foot Stalks, and are rounder at their Extremity than thoſe of the 4th; the Stalks are ſmoother, grow much taller, and the Branches extend much farther; and the Leaves of the Empalement are larger, but the

Flowers are ſmaller, and theſe Differences are conſtant. There is a Variety of the 4th Sort, with Sulphur-coloured Flowers, which is changeable.

Theſe are annual Plants, which grow naturally in the South of *France*, *Italy*, *Spain*, and *Sicily*. The 4th Sort riſes a Foot and a Half high, but the 5th near twice that Height. Their Stalks divide into many Branches upward, and theſe Side Branches riſe above the middle Stalk. They are garniſhed with Spear-ſhaped hairy Leaves, placed alternately; the Flowers are produced at the End of the Branches, on ſhort Foot Stalks; the Empalement conſiſts of ſeven long ſtiff Spear-ſhaped Leaves, ending in a ſharp Point; theſe ſpread out to a great Diſtance beyond the Rays of the Flower, in Form of a Star. The Flower ſits cloſe upon the Empalement, the Border or Rays being compoſed of many female Florets, which have one Side ſtretched out like a Tongue, and indented at the End in three Parts; the Middle or Diſk of the Flower, is compoſed of hermaphrodite Flowers, which are tubulous, Funnel-ſhaped, and ſlightly indented in five Parts at the Brim; they are of a bright yellow Colour, and are ſucceeded by oblong compreſſed Seeds. Theſe Plants flower in *June* and *July*, and their Seeds ripen in *September*, ſoon after which the Plants decay.

The Seeds ſhould be ſown in *April*, on open Borders, where they are to remain, and only require to be kept clear of Weeds, and thinned to the Diſtance of a Foot and a Half, that their Branches may have Room to ſpread.

The 6th, 8th, and 9th Sorts, are alſo annual Plants, which grow naturally in the ſame Countries. Theſe ſeldom grow more than one Foot high in Gardens, but where they are wild not ſo high; they ſend out many ſpreading Branches near the Root; theſe come out alternate, as alſo their Leaves, which are oblong, blunt, and hairy, growing cloſe to the Branches without any Foot Stalks; the Leaves of the Empalement of the 6th Sort, end in a very ſharp Spine, and are much broader at their Baſe than either of the other. The Flowers of all theſe have much the Appearance of thoſe of the two laſt, but are ſmaller, and thoſe of the 8th have an agreeable Odour. They flower at the ſame Seaſon with the 4th and 5th, and are propagated in the ſame Manner.

The 7th Sort is a low perennial Plant, with a ſhrubby Stalk, which rarely riſes a Foot high, ſending out many ſpreading Branches from the Stem; theſe are garniſhed with hairy Leaves, very narrow at their Baſe, but broad and roundiſh at their Extremity; the Flowers are produced at the End of the Branches, which are yellow, and ſhaped like thoſe of the former Sorts, but the Leaves of the Empalement are ſoft and obtuſe. Theſe are rarely ſucceeded by Seeds in *England*, but the Plant is eaſily propagated by Slips during the Summer Seaſon; if the Cuttings are planted in a Bed of freſh loamy Earth, and covered with a Hand Glaſs, obſerving to ſhade them from the Sun in the Heat of the Day, and frequently refreſhed with Water, they will take Root in about ſix Weeks, when they ſhould be carefully taken up, and each planted in a ſmall Pot filled with freſh undunged Earth, and placed in a ſhady Situation till they have taken freſh Root, after which they may be removed to a ſheltered Situation, where they may remain till the End of *October*, when they muſt be removed to a Frame for the Winter Seaſon, being too tender to live abroad in Winter in this Country; but as they only require Protection from hard Froſts, ſo they will thrive better when they have a great Share of Air in mild Weather, than if confined in a Green-houſe. This Sort grows naturally in *Sicily*; it flowers great Part of the Year, which renders it the more valuable.

The 10th Sort riſes with ſeveral woody Stems from the Root, which grow to the Height of eight or ten Feet, garniſhed with Leaves very unequal in Size, ſome of which are very narrow and long, others broad and obtuſe; theſe are intermixed, ſometimes coming out at the ſame Joint, and often at the intermediate one; they are ſoft, hoary, and placed oppoſite: The Foot Stalks of the larger Leaves have on their upper Side, near their Baſe, two ſharp Teeth ſtanding upward, and a little higher there are generally two or three more, growing on the Edge of the Leaves. The Flowers are produced at the Ends of the Branches ſingle; theſe are of a pale yellow Colour, and have ſcaly Empalements. It grows naturally in *America*. I received another Sort of this from the *Havannah*, which was found growing naturally there by Dr. *Houſtoun*, who ſent it by the Title of, *Chryſanthemum fruticoſum maritimum, foliis glaucis oblongis, flore luteo. Sloan. Hiſt. Jam.* 1. The Leaves of this are ſhorter and thicker than thoſe of the 10th Sort, and have no Teeth on their Foot Stalks, but in other Reſpects are very like it, but the Plants are not ſo hardy. The 10th has been long preſerved in the *Engliſh* Gardens, and was originally brought from *Virginia*, as I was informed by the Biſhop of *London*'s Gardener, who raiſed it in 1696 at *Fulham*.

The 11th Sort grows naturally in the *Bahama Iſlands*, from whence I received the Seeds. This ſeldom grows much more than three Feet high, ſending out many Stalks from the Root, which are ſucculent, except near the Root, where they are ligneous: theſe are garniſhed with thick ſucculent Spear-ſhaped Leaves placed oppoſite; the Flowers are produced at the Branches upon Foot Stalks which are two Inches long. Theſe Flowers are larger than thoſe of the 10th Sort, and of a bright yellow Colour. They appear in *July*, *Auguſt*, and *September*, but often continue till the End of *October*. It alſo grows plentifully on the Borders of the Sea, at the *Havannah*.

The 12th Sort grows in the *Bahama Iſlands*, from whence I received the Seeds. This ſends out many ſlender Stalks, which riſe near three Feet high, and are garniſhed with long narrow thick ſucculent Leaves, very hoary, growing oppoſite, and embracing the Stalk at their Baſe; the Flowers are yellow, and are produced at the Ends of the Shoots, having very ſhort Foot Stalks; they appear at the ſame Time with the 11th Sort.

As theſe three Sorts do not perfect their Seeds in this Country, ſo they are propagated by Cutings. They ſhould be planted in *July*, when the Plants have been for ſome Time expoſed to the open Air, whereby their Shoots will be hardened and better prepared to take

Root, than when they firſt come abroad. The Cuttings ſhould be planted in ſmall Pots filled with light loamy Earth, and plunged into a very gentle Warmth, obſerving to ſhade them from the Sun in the Heat of the Day, and gently refreſh them with Water, but it muſt be given to them ſparingly, for much Wet will rot them. In about ſix Weeks theſe will have taken Root, when they muſt be gradually inured to bear the open Air, and ſoon after they ſhould be each planted in a ſmall Pot, filled with light loamy Earth, and placed in the Shade until they have taken freſh Root; after which they may be removed to a ſheltered Situation, to remain till the Middle of *October*, when they muſt be removed into the Green-houſe. The 10th Sort being hardier than either of the other, may be placed in a common Green-houſe; but the other two will thrive better in a warm Glaſs-Caſe, where they will receive more Sun, and have a drier Air. During the Winter, they ſhould have but little Moiſture, and in very mild Weather ſhould have freſh Air admitted to them. In Summer they muſt be placed abroad in a ſheltered Situation, and treated as other exotick Plants.

BUPLEUROIDES. *See* Phyllis.

BUPLEURUM. *Lin. Gen. Plant.* 291. *Tourn. Inſt.* 309. *Tab.* 163. Hare's-ear.

The *Characters* are,

It is a Plant with an umbellated Flower; the Rays of the principal Umbel are thin, conſiſting of ten ſmaller Umbels, erect and ſpread; the Involucrum of the great Umbel is compoſed of many oval pointed Leaves, thoſe of the ſmall have five. The Flower hath five ſmall Heart-ſhaped Petals, inflexed; it hath five ſlender Stamina, terminated by roundiſh Summits. The Germen is ſituated below the Flower, ſupporting two ſmall reflexed Styles, crowned by a ſmall Stigma. The Germen becomes a roundiſh compreſſed Fruit channeled, dividing in two Parts, containing two oblong channeled Seeds, convex on one Side, and plain on the other.

The *Species* are,

1. BUPLEURUM *involucris univerſalibus nullis, foliis perfoliatis. Hort. Upſal.* 64. Hare's-ear, whoſe greater Umbel hath no Involucrum, and the Stalks growing through the Leaves. This is the *Perfoliata vulgatiſſima ſive arvenſis. C. B. P.* 277. Moſt common or Field Thorough Wax.

2. BUPLEURUM *involucellis pentaphyllis orbiculatis, univerſali triphyllo ovato, foliis amplexicaulibus cordato-lanceolatis. Lin. Sp. Plant.* 236. Hare's-ear with the ſmall Involucrums compoſed of five orbicular Leaves, the larger of three oval ones, and Heart Spear-ſhaped Leaves embracing the Stalk. This is the *Perfoliata Alpina anguſtifolia major anguloſo. C. B. P.* Greater narrow-leaved Thorough Wax of the *Alps*, with an angular Leaf.

3. BUPLEURUM *involucellis pentaphyllis acutis, univerſali triphyllo, floſculo centrali altiore, ramis divaricatis. Lin. Sp. Plant.* 237. Hare's-ear with ſmaller Involucrums, compoſed of five pointed Leaves which are acute, thoſe of the larger three-leaved, the Flower in the Center taller, and the Branches ſpreading from each other. This is the *Perfoliata minor anguſtifolia, Bupleuri folio. C. B. P.* 277. Smaller narrow-leaved Thorough Wax with a Hare's-ear Leaf.

4. BUPLEURUM *caule dichotomo ſubnudo, involucris minimis acutis. Lin. Sp. Plant.* 238. Hare's-ear with Stalks growing from the Diviſion of the Branches, which have no Leaves below, and a very ſmall pointed Involucrum. This is the *Bupleurum folio rigido. C. B. P.* 278. Hare's-ear with a ſtiff Leaf.

5. BUPLEURUM *umbellis ſimplicibus alternis pentaphyllis ſubtrifloris. Lin. Sp. Plant.* 238. Hare's-ear with ſingle Umbels growing alternate, and five Leaves under each three Flowers. This is the *Bupleurum anguſtiſſimo folio. C. B. P.* 278. Hare's-ear with a very narrow Leaf.

6. BUPLEURUM *fruteſcens, foliis obovatis integerrimis. Lin. Sp. Plant.* 238. Shrubby Hare's-ear, with oblong oval Leaves which are entire. This is the *Bupleurum arboreſcens ſalicis folio. Tourn. Inſt.* 310. Tree-like Hare's-ear with a Willow Leaf. And the *Seſeli Æthiopicum frutex. Dod. Pempt.* 312. Shrubby Hartwort of *Ethiopia*.

7. BUPLEURUM *fruteſcens, foliis vernalibus decompoſitis planis inciſis, æſtivalibus filiformibus angulatis trifidis. Lin. Sp. Plant.* 238. Shrubby Hare's-ear, whoſe Spring Leaves are decompounded, plain and cut, and the Summer Leaves are narrow, angular, and trifid. This is the *Bupleurum fruteſcens foliis ex uno puncto plurimis junceis tetragonis. Burman. Afr.* 195. *Tab.* 71. *fol.* 1. Shrubby Hare's-ear, with many four angled ruſhy Leaves coming from one Point.

The 1ſt Sort grows naturally upon chalky Land amongſt Wheat, in ſeveral Parts of *England*, ſo is ſeldom admitted into Gardens. The Leaves and Seeds of this Plant are uſed in Medicine; the Herb is eſteemed good for diſſolving ſcrophulous Tumours, and is by ſome uſed for internal Ailments, Ruptures, and Bruiſes from a Fall. This is an annual Plant.

The 2d, 3d, 4th, and 5th Sorts, are alſo annual. The 5th Sort grows naturally in ſeveral Parts of *England*, the others are Natives of the *Alps* and *Pyrenees*; theſe are ſeldom cultivated but in botanic Gardens for Variety. Thoſe who are deſirous to have any of theſe in their Gardens, ſhould ſow their Seeds in Autumn, where the Plants are deſigned to remain, for they do not bear tranſplanting well; and keep the Plants clean from Weeds. They flower in *June* and *July* and their Seeds ripen in *September*.

The 6th Sort hath a woody Stem, which ſends out many Branches on every Side, ſo as to form a large Head. Theſe are covered with a purpliſh Bark, garniſhed with oblong oval ſtiff Leaves, very ſmooth and of a Sea-green Colour; the Ends of the Branches are terminated by Umbels of yellow Flowers, ſomewhat like thoſe of Fennel. Theſe come out in *Auguſt*, but ſeldom perfect Seeds in *England*. It grows naturally in the South of *France* and *Italy*, near the Borders of the Sea, and is commonly known among Gardeners by the Title of Shrubby *Ethiopian* Hartwort. This grows five or ſix Feet high, forming a large regular Buſh, and the Leaves continuing green through the Year, render it more valuable. It is hardy, ſo will live in the open Air, and may be intermixed with other ever-green Shrubs of the ſame Growth, in the Front of taller Trees, where their Stems are deſigned to be excluded from Sight, where they make an agreeable Variety. It is propagated by Cuttings, which ſhould be planted in Pots filled with freſh loamy Earth, and in Winter ſheltered under a hot Bed Frame; in Spring the Cuttings will put out Roots, but they will not be fit to tranſplant till the Autumn following; ſo the Pots ſhould be placed in a ſhady Situation in Summer, and in dry Weather muſt be refreſhed with Water. The young Plants may be planted in a Nurſery Bed at two Feet Diſtance, for a Year or two to get Strength, and then tranſplanted where they are to remain.

The 7th Sort grows naturally at the *Cape of Good Hope*, from whence it was introduced to the Gardens in *Holland*. This riſes with a ſhrubby Stalk five or ſix Feet high, ſending out ſome Side Branches, which in Spring have their lower Parts garniſhed with Leaves compoſed of many ſmall plain Lobes, finely cut like thoſe of Coriander, and of a Sea-green Colour, theſe Leaves ſoon fall off, and the upper Part of the Branches are cloſely covered with long Ruſh like Leaves having four Angles, which come out in Cluſters from each Joint. The Flowers grow in ſpreading Umbels at the Extremity of the Branches, which are ſmall and of an herbaceous Colour, and are ſucceeded by oblong channeled Seeds.

This Sort is commonly propagated by Cuttings, which readily take Root, if planted in *April* in Pots filled with light Earth, and plunged into a moderate hot Bed; when they have taken Root, they ſhould be inured to the open Air by Degrees, and having obtained Strength, may be planted each into a Pot filled with light loamy Earth, placing them in the Shade, till they have taken freſh Root, when they may be placed with other exotick Plants in a ſheltered Situation, where they may remain till Autumn, when they muſt be removed into the Green-houſe, and placed with ſuch hardy Plants as require a large Share of Air in mild Weather, and only require Protection from Froſt.

If this Plant is propagated by Seeds, they ſhould be ſown in Autumn, ſoon after they are ripe, in Pots filled with light Earth, which muſt be ſheltered under a Frame in Winter, and in Spring removed to a very gentle hot Bed, which will ſoon bring up the Plants; theſe muſt be inured to bear the open Air by Degrees, and then treated as thoſe raiſed from Cuttings. This Plant flowers in *July*, and the Seeds ripen in *September*.

BURNET. *See* Poterium *and* Sanguiſorba.

BURSA PASTORIS, Shepherds-pouch; is a common Weed, which propagates ſo faſt by Seeds, as not to be eaſily cleared when they are permitted to ſhed; for there are commonly four Generations of this Plant from Seeds in a Year, ſo faſt does the Seed ripen, and the Plants come up; therefore it cannot be too ſoon or carefully rooted out of a Garden.

BUTOMUS, Flowering-ruſh, or Water-gladiole.

The *Characters* are,

The Flowers grow in a ſingle Umbel, having a ſhort three leaved Involucrum. The Flower hath ſix roundiſh concave Petals, which are alternately ſmaller and more pointed; it hath nine Awl-ſhaped Stamina, ſix of which ſurround the other, and are terminated by double lamellated Summits; it hath ſix oblong pointed Germen, ſupporting a ſingle Stigma; the Germen afterward become ſix oblong pointed Capſules, having one Cell filled with oblong Seeds.

BUTOMUS, *Fl. Lap.* 159. The Flowering-ruſh or Water-gladiole. This is the *Juncus floridus major. C. B. P.* 12. Greater Flowering-ruſh.

There are two Varieties of this Plant, one with a Roſe coloured Flower, and the other with a white Flower; but theſe are only accidental Variations, therefore not to be enumerated as diſtinct Species.

The Roſe coloured Sort is pretty common in ſtanding Waters, in many Parts of *England*; the other is a Variety of this, though leſs common near *London*. Theſe Plants may be propagated in boggy Places, or by planting them in Ciſterns, which ſhould be kept filled with Water, and about a Foot of Earth in the Bottom, into which the Roots ſhould be planted, or the Seed ſown as ſoon as they are ripe; theſe, though common Plants, yet produce very pretty Flowers, and are worth propagating for Variety's ſake, eſpecially if in any Part of the Garden there ſhould be Conveniency for an artificial Bog, or where there are Ponds of ſtanding Water, as is many times the Caſe, and Perſons are at a Loſs what to plant in ſuch Places, that may appear beautiful; whereas, if theſe, and a few more wild Plants, which naturally grow in ſuch Places, were taken into the Garden, they would have a very good Effect in diverſifying the ſeveral Parts of it.

BUXUS, The Box Tree.

The *Characters* are,

It hath male and female Flowers on the ſame Plant; the male Flowers have a three leaved, and the female a four leaved Empalement which are concave. The male Flowers have two, and the female three concave Petals, larger than the Empalement. The male Flowers have four upright Stamina, terminated by double erect Summits with a Rudiment of a Germen, but no Style or Stigma. The female Flowers have roundiſh, blunt, three cornered Germen, ſupporting three very ſhort Styles, crowned by obtuſe prickly Stigma. The Empalement becomes a roundiſh Capſule, ſhaped like an inverted Pottage Pot, opening in three Cells, each having two oblong Seeds, which are caſt forth by the Elaſticity of the Pod when ripe.

The *Species* are,

1. BUXUS *arboreſcens, foliis ovatis.* Tree Box with oval Leaves.

2. BUXUS *arboreſcens folliis lanceolatis.* Tree Box with Spear-ſhaped Leaves. This is the Narrow leaved Box.

3. BUXUS *humilis, foliis orbiculatis.* Dwarf Box with round Leaves. This is the Dwarf or *Dutch* Box.

Theſe are certainly three diſtinct Species. The two Sorts of Tree Box have been frequently raiſed from Seeds, and conſtantly produced Plants of the ſame Kind; the Dwarf Box will never riſe to any conſiderable Height with any Culture, nor have I ever ſeen this Sort flower, where the Plants have been encouraged to grow many Years in the greateſt Luxuriancy. There are three Varieties of the firſt Sort, one with yellow, and the other white ſtriped Leaves, the third hath the Tops of the Leaves only marked with yellow, which is called *Tiped Box*.

The 1ſt and 2d Sorts grow in great Plenty upon *Box-hill* near *Darking* in *Surry*, where were formerly large Trees of theſe Kinds; but of late they have been much deſtroyed; yet there are great Numbers of the Trees remaining, of a conſiderable ſize. The Wood of this Tree is very uſeful for Turners, Engravers, and Mathematical Inſtrument-makers, being ſo hard, cloſe, and ponderous, as to ſink in Water, which renders it very valuable for divers Utenſils.

All the Varieties of the Tree or large Box are proper to intermix in Clumps of Ever-greens, *&c.* where they add to the Variety of ſuch Plantations; theſe may be propagated by planting the Cuttings in Autumn in a ſhady Border, obſerving to keep them watered until they have taken Root; when they may be tranſplanted into Nurſeries, till they are fit for the Purpoſes intended. The beſt Seaſon for removing theſe Trees is in *October*, though indeed, if Care be uſed to take them up with a good Ball of Earth, they may be tranſplanted at any time, except in the Summer: They are a very great Ornament to cold and barren Soils, where few other Trees will grow; they may alſo be propagated by laying down the Branches, or from Seeds: The laſt is the beſt Method to have them grow large, the Seeds muſt be ſown ſoon after they are ripe in a ſhady Border, and duly watered in dry Weather.

The Dwarf Box is uſed for bordering Flower Beds, or Borders; for which Purpoſe it far exceeds any other Plant, being ſubject to no Injuries from Cold or Heat, and of long Duration, is very eaſily kept handſome, and, by the Firmneſs of its Rooting, keeps the Mould in the Borders from waſhing into the Gravel-walks, more effectually than any Plant whatever. This is increaſed by parting the Roots, or planting the Slips; but as it makes ſo great an Increaſe of itſelf, and ſo eaſily parts, it is hardly worth while to plant the Slips that have no Roots; it is now become ſo common, that it may be purchaſed from the Nurſeries at a cheap Rate.

The manner of planting this in Edgings, *&c.* is ſo well known to every working Gardener, that it would be needleſs to mention any Thing of that Kind here.

C.

CAAPEBA. *See* Ciſſampelus.

CABBAGE. *See* Braſſica.

CABINET, in a Garden, differs from an Arbour in this, that an Arbour or Summer-houſe is of a great Length, and arched over Head in the Form of a Gallery; but a Cabinet is either ſquare, circular, or in Cants, making a Kind of Salon, at the two Ends, or in the Middle of a long Arbour.

CACALIANTHEMUM. *See* Cacalia.

CACALIA. *Foreign* Coltsfoot.

The *Characters* are,

It hath compound Flowers, which are included in one common ſcaly Empalement, which is cylindrical: The Flowers are tubulous and Funnel-ſhaped, cut at the Top into five Parts which ſtand erect; theſe have each five ſhort ſlender Stamina, terminated by cylindrical Summits: The Germen is crowned with Down, ſupporting a ſlender Style crowned by two oblong recurved Stigma; the Germen afterward becomes ſingle oblong Seed, crowned with long Down.

The *Species* are,

1. CACALIA *foliis reniformibus acutis denticulatis. L. Sp. Plant.* 836. *Cacalia* with Kidney-ſhaped Leaves, ſharply indented. This is the *Cacalia foliis craſſis hirſutis. C. B. P.* 197. *Cacalia* with thick hairy Leaves.

2. CACALIA *foliis cordatis ſerratis glabris. Cacalia* with ſmooth Heart-ſhaped Leaves, and ſawed Edges.

3. CACALIA *caule herbaceo foliis haſtato-ſagittatis denticulatis petiolis ſupernè dilatatis. Hort. Upſal.* 254. *Cacalia* with an herbaceous Stalk, Spear-ſhaped indented Leaves, the upper Side of the Foot Stalk ſpreading. *Cacalia Americana procerior, folio triangulari, floribus albis. edit. Prior.* Taller *American Cacalia* with a triangular Leaf eared at the Baſe, and white Flowers.

4. CACALIA *caule herbaceo, foliis ſubcordatis dentato-ſinuatis, calycibus quinquefloris. Lin. Sp. Plant.* 835. *Cacalia* with an herbaceous Stalk, Heart-ſhaped ſinuated Leaves, and five Florets in each Empalement. This is the *Nardus Americana procerior, foliis cæſiis. Pluk. Alm.* 251. Taller *American Nardus* with pale coloured Leaves.

5. CACALIA *caule fruticoſo, foliis compreſſis carnoſis. Lin. Sp. Plant.* 834. *Cacalia* with a ſhrubby Stalk, and fleſhy compreſſed Leaves. This is the *Senecio Africanus arboreſcens, ficoidis folio & facie. Com. Rar. Plant.* 40. *African* Tree Groundſel with the Fig Marigold Leaf.

6. CACALIA *caule fruticoſo compoſito, foliis lanceolatis planis, petiolorum cicatricibus obſoletis. Lin. Sp. Plant.* 834. *Cacalia* with a compound ſhrubby Stalk, plain Spear-ſhaped Leaves, and the Foot Stalks having Scars. This is the *Cacalianthemum folio nerii glauco. Hort. Elth.* 61. *Tab.* 54. *Cacalianthemum* with a Sea-green Roſebay Leaf; and the *Arbor lavendulæ folio. I. B.* Lavender-Leaf Tree.

7. CACALIA *caule fruticoſo obvallato ſpinis petiolaribus truncatis. Lin. Sp. Plant.* 834. *Cacalia* with a ſhrubby Stalk, guarded on every Side with broken rough Foot Stalks. *Cacalianthemum caudice papillari. Hort. Elth.* 63. *Tab.* 55. *Cacalianthemum* whoſe Stalk is ſet with Nipples.

8. CACALIA *caule fruticoſo, foliis ovato-oblongis, petiolis baſi linea triplici deductis. Lin. Sp. Plant.* 834. *Cacalia* with a ſhrubby Stalk, oblong oval Leaves, and three Lines connected to the Baſe of the Foot Stalk. This is the *Kleinia foliis carnoſis planis ovato-oblongis. Hort. Cliff.* 395. *Kleinia* with oblong oval plain fleſhy Leaves; and the *Anteuphorbium. C. B. P.* 387.

The 1ſt Sort grows naturally in *Auſtria*, and the *Helvetian* Mountains; but is frequently preſerved in curious Gardens for Variety. This hath a fleſhy Root which ſpreads in the Ground, from which ſprings up many Leaves, ſtanding on ſingle Foot Stalks, ſhaped like thoſe of Ground Ivy, but of a thicker Texture, of a ſhining green on their upper Side, but white on their under Side; between theſe ariſe the Stalk, which is round, branching toward the Top, and grows a Foot and a Half high; under each Diviſion of the Stalk is placed a ſingle Leaf, of the ſame Shape with thoſe below, but much ſmaller; the Branches are terminated by purpliſh Flowers, growing in a ſort of Umbel. Theſe are ſucceeded by oblong Seeds, crowned with Down.

The 2d Sort hath the Appearance of the firſt, but the Leaves are Heart-ſhaped, pointed, and ſharply ſawed on their Edges, and on both Sides very green; the Stalks riſe higher, and the Leaves on the Stalks have much longer Foot Stalks than thoſe of the firſt. The Flowers are of a deeper purple Colour. This grows naturally on the *Alps*. They flower toward the End of *May*.

The 3d Sort grows naturally in *North America*, from whence the Seeds were brought to *England*. It hath a perennial creeping Root, ſending out many Stalks in the Spring, garniſhed with triangular Spear-ſhaped Leaves, ſharply ſawed on their Edges, of a pale green on their under Side, but a deep ſhining green above, and placed alternately. The Stalks riſe ſeven or eight Feet, and are terminated by Umbels of white Flowers, which are ſucceeded by oblong Seeds crowned with Down. It flowers in *Auguſt*, and the Seeds ripen in *October*. This Plant multiplies greatly by its ſpreading Roots, and alſo by the Seeds, which are carried to a great Diſtance by the Wind. The Roots of this Plant, which have been caſt out of the *Chelſea* Garden, have been carried by the Tides to a great Diſtance, where they have lodged on the Banks of the River, and faſtened themſelves to the Ground, and have increaſed ſo much, that in a few Years, it may be thought a Native of this Country. The Stalks decay in Autumn, and riſe again in Spring.

The 4th Sort is a Native of *America*, but has been many Years in ſome curious Gardens. This hath a perennial Root, and an annual Stalk. The Root is compoſed of many fleſhy Tubers, which ſpread every Way, and put out ſeveral ſtrong Stalks in the Spring, which riſe four or five Feet, and are garniſhed with roundiſh Heart-ſhaped Leaves, greatly indented on their Edges, of a Sea-green on the under Side, but darker above, placed alternately the Length of the Stalks; theſe are terminated by Umbels of yellowiſh herbaceous Flowers, appearing in *July* and *Auguſt*, and ſucceeded by Seeds like the former Sort, which ripen in *October*.

The 1ſt and 2d Sorts are propagated by parting their Roots, for they ſeldom produce good Seeds in *England*. The beſt Time to part and tranſplant them is in Autumn. They require a loamy Soil, and ſhady Situation.

The 3d and 4th Sorts propagate in great Plenty, both by their ſpreading Roots, and Seeds. The Roots ſhould be tranſplanted in Autumn, and require a moiſt Soil, and an open Situation. If its Seeds are permitted to ſcatter, they will riſe in Spring without Care.

The 5th Sort grows naturally at the *Cape of Good Hope*, from whence it was brought to *Holland*, and about the Year 1718, was introduced to the *Engliſh* Gardens. This riſes with ſtrong round Stalks, to the Height of ſeven or eight Feet, which are woody at bottom, but ſoft and ſucculent upward, ſending out many irregular Branches, garniſhed more than half their Length, with thick taper ſucculent Leaves, a little compreſſed on two Sides, ending in Points, and covered with a whitiſh glaucous Farina, which comes off when handled. Theſe, when broken, emit a ſtrong Odour of Turpentine, and are full of a viſcous Juice; at the Extremity of the Branches the Flowers are produced in ſmall Umbels; they are white, tubulous, and cut into five Parts at the Top. The Stigma which crowns the Style is of a dark purple Colour, and ſtands erect above the Tube. The Stamina are much ſhorter, and ſurround the oblong Germen, which is ſituated in the Center of the Tube, and crowned by long, white, hairy Down. The Germen becomes an oblong Seed, with the ſame Down adhering to it; but do not ripen in *England*. Some of the Noblemen in *France* have the Leaves of this Plant pickled, in doing which, they Contrive to preſerve the white Farina, with which they are covered, and thereby render them very beautiful.

This Sort is eaſily propagated by Cuttings, during the Summer Months: Theſe ſhould be cut from the Plants and laid to dry a Fortnight, that the Wound may be healed over before they are planted. Some plunge the Pots, in which they are planted, into a moderate hot Bed, to forward their puting out Roots; but if they are planted in *June*, or *July*, they will root as well in the open Air. I have had the Branches broken off by Accident, and fallen on the Ground, which have put out Roots without any Care. Theſe Branches may be kept ſix Months out of the Ground, and will take Root if planted. This ſhould have a light ſandy Earth, and in Winter be placed in an airy Glaſs Caſe, where they may enjoy the Sun, and Air in mild Weather, but muſt be protected from Froſt; during Winter, the Plants muſt have but little Water; and in Summer, when they are placed in the open Air, it ſhould not be given them too often, nor in great Quantity, but treated like the Ficoides, and other ſucculent Plants. It flowers uſually in Autumn, but is not conſtant to any Seaſon.

The 6th Sort grows naturally in the *Canary Iſlands*; but has been long in the *Engliſh* Gardens. This riſes with a thick fleſhy Stem, divided at certain Diſtances, as it were in ſo many Joints; each of theſe Diviſions ſwell much larger in the Middle, than they do at each End; the Stalks divide into many irregular Branches of the ſame Form, which, toward their Extremities, are garniſhed with long narrow Spear-ſhaped Leaves, of a glaucous Colour, ſtanding all round the Stalks, without Order. As theſe fall off, they leave a Scar at the Place, which always remains on the Branches. The Flowers are produced in large Cluſters, at the Extremity of the Branches, which are tubulous, and of a faint Carnation Colour. They appear in *Auguſt* and *September*, but continue great Part of *October*, and are not ſucceeded by Seeds in this Country. There have been Stones and Foſſils dug up at a great Depth in ſome Parts of *England*, which have very perfect Impreſſions of this Plant upon them; from whence Dr. *Woodward* has ſuppoſed the Plants were lodged there at the univerſal Deluge; and finding the Impreſſions of many other Plants and Animals, which are Natives of thoſe Iſlands, he concludes that the Waters flowed hither from the South-Weſt.

This Plant has been called Cabbage Tree, by the Gardeners, from the Reſemblance of its Stalks to thoſe of the Cabbage: Others, Carnation Tree, from the Shape of the Leaves, and Colour of the Flowers.

It is propagated by Cuttings, as the former Sort, and the Plants require the ſame Culture; but muſt have a dry warm Glaſs Caſe in Winter, and very little Water, being very ſubject to rot with Wet. In Summer they muſt be placed in the open Air, in a warm ſheltered Situation, and in very dry Weather refreſhed moderately with Water. With this Management the Plants will flower annually, and grow to the Height of eight or ten Feet.

The 7th Sort reſembles the 6th in its Form and Manner of Growth; but the Leaves are narrower and more ſucculent. Theſe do not fall off entire like the other, but break off at the Beginning of the Foot Stalk, which are very ſtrong and thick; and always continue, ſo that the main Stalk of the Plant, and the lower Part of the Branches, which are deſtitue of Leaves, are ſet round on every Side with theſe truncated Foot Stalks. This Sort hath not as yet produced Flowers in *England*. It is propagated as the two former Sorts, from Cutings, and the Plants muſt be treated as the 5th Sort, but require to be kept drier, both in Winter and Summer; therefore, in very wet Seaſons, the Plants ſhould be ſheltered from hard Rains, which often cauſe them to rot, when expoſed thereto; but they require the open Air in Summer. This Sort grows naturally at the *Cape of Good Hope*.

The 8th Sort has been long preſerved in the *Engliſh* Gardens, and was generally titled *Anteuphorbium*, ſuppoſing it to have a contrary Quality to the *Euphorbium*. This riſes with many ſucculent Stalks, as large as a Man's Finger, which branch upward, into many irregular Stalks of the ſame Form but ſmaller, and are garniſhed with flat oblong ſucculent Leaves placed alternately round the Branches; under each Foot Stalk there are three Lines or Ribs, which run longitudinally through the Branches joined together. This Sort very rarely flowers in *Europe*, but is propagated by Cuttings as the 5th, and is equally hardy. It muſt have very little Wet, eſpecially in Winter, and requires a dry ſandy poor Soil.

CACAO. *Tourn. Inſt. R. H.* 660. *Theobroma. Lin. Gen.* 806. The Chocolate Nut.

The *Characters* are,

The Empalement is compoſed of five Spear-ſhaped Leaves, which ſpread open. The Flower hath five Petals, which are irregularly indented, and ſpread open; it hath five erect Stamina, as long as the Petals, terminated by pointed Summits. In the Center is placed the oval Germen, ſupporting a ſingle Style, the Length of the Stamina, crowned by an erect Stigma. The Germen afterward becomes an oblong Pod, ending in a Point, which is woody, warted, and divided into five Cells, filled with oval, compreſſed, fleſhy Seeds.

We have but one *Species* of this Plant, which is,

CACAO. *Cluſ. Exot.* The Chocolate Nut Tree.

This Tree is a Native of *America*, and is found in great Plenty in ſeveral Places between the Tropicks, but particularly at *Carracca* and *Carthagena*, on the River *Amazons*, in the Iſthmus of *Darien*, at *Honduras*, *Guatimala*, and *Nicaragua*. At all theſe Places it grows naturally without Culture, but is cultivated in many of the Iſlands poſſeſſed by the *French* and *Spaniards*, and was formerly planted in ſome of the Iſlands which are in the Poſſeſſion of the *Engliſh*; but it has been neglected for many Years paſt, ſo that at preſent it is ſo ſcarce in thoſe Places, that the *Engliſh* are ſupplied by the *French* and *Spaniards*, who make the Inhabitants pay them a good Price for it; and as there is a great Quantity of it conſumed in *England*, conſequently it muſt make an Alteration in the Balance of Trade greatly to the Prejudice of the *Engliſh*; which might be eaſily remedied, if the Planters in our Colonies were but the leaſt induſtrious; ſince, as it formerly grew on thoſe Iſlands, ſo as to produce not only a ſufficient Quantity for their own Conſumption, but to ſupply *England* with great Quantities, there can be no Objection to the planting it in thoſe Iſlands again, eſpecially in Situations where the Sugar Canes do not thrive to Advantage.

I ſhall therefore ſubjoin the beſt Account of this Plant, and the Culture which it requires in thoſe Countries, with the Profits which have ariſen from it to thoſe who have planted ſome of theſe Trees of late Years, by way of Experiment, in order to incite others to follow their Example; and ſhall afterward give Directions for cultivating it in *England*, by way of Curioſity.

In making a Plantation of Chocolate Trees, you muſt firſt be very careful in your Choice of the Situation, and Soil, otherwiſe there will be ſmall Hopes of Succeſs. As to Situation, it ſhould be where the Trees may be protected from ſtrong Winds, to which if they are expoſed, they will ſoon be deſtroyed: In Places where Torrents of Water have waſhed away the Earth ſo as to leave broad and deep Furrows or Gullies, theſe Trees will thrive exceedingly; as theſe are very frequently to be found in thoſe Iſlands, and many of them are of large Extent and not much cultivated, ſo it may be a great Improvement to ſome Eſtates, which, at preſent, are of ſmall Value. The Soil in theſe Gullies is generally rich and moiſt, which is what theſe Trees require, ſo that they will make great Progreſs, as hath been experienced by thoſe who have lately made Trials of the Plants in ſuch Situations; but where there are not a ſufficient Number of theſe Gullies, Choice ſhould be made of a Situation well ſheltered by large Trees; or, if there are not Trees already grown, there ſhould be three or four Rows planted round the Spot deſigned for the Chocolate Trees, of ſuch Sorts as are of quickeſt Growth; and within theſe Rows there ſhould be ſome Plantain Trees, placed at proper Diſtances, which being very quick of Growth, and the Leaves very large, will afford a kindly Shelter to the young Chocolate Trees placed between them.

The Chocolate Trees which are cultivated, ſeldom riſe higher than 14 or 15 Feet, nor do they ſpread their Branches very wide; ſo that if the Plantain Trees are placed in Rows, about twenty four Feet aſunder, there will be Room enough for two Rows of Chocolate Trees between each Row of Plantains; and if they are planted at ten Feet Diſtance in the Rows, it will be ſufficient Room for them. Thoſe Trees which are found wild in uncultivated Places, are generally of much larger Growth, which may be occaſioned by the Shelter of other Trees, among which theſe are found growing, being protected from the Winds by them, and the other Trees cloſely ſurrounding them, will naturally draw them up to a greater Height: However, that is not deſirable in theſe Trees; for the lower they are, the better the Fruit may be gathered without hurting the Trees, and the leſs they are expoſed to the Injuries of the Weather; ſo that the Inhabitants never deſire to have their Trees above 12 or 14 Feet high.

The Soil in which they thrive to moſt Advantage, is a moiſt, rich, deep Earth; for they generally ſend forth one Tap Root, which runs very deep into the Ground, ſo that where they meet with a rocky Bottom near the Surface, they ſeldom thrive, nor are they of long Continuance; but in a rich, deep, moiſt Soil, they will produce ſome Fruit the third Year from Seed, and continue fruitful for ſeveral Years after.

Before the Plantation is begun, the Ground ſhould be well prepared by digging it deep, and clearing it from the Roots of the Trees, and noxious Plants, which, if ſuffered to remain in the Ground, will ſhoot up again after the firſt Rain, and greatly obſtruct the Growth of the Plants; ſo that it will be almoſt impoſſible to clear the Ground from thoſe Roots, after the Chocolate Plants are come up, without greatly injuring them.

When the Ground is thus prepared, the Rows ſhould be marked out by a Line, and the Nuts planted in a quincunx Order, at equal Diſtances every Way, or the Plaintain Trees between them may form a Quincunx, with the two Rows of Chocolate Trees, which are placed between each Row of them.

In making a Plantation of Chocolate Nut Trees, the Nuts muſt be planted where the Trees are to remain; for if they are tranſplanted, they ſeldom live; and thoſe which ſurvive, never make thriving Trees; for, as I before obſerved, theſe Trees have a tender Tap Root, which, if broken or injured, the Tree commonly decays.

The Nuts ſhould always be planted in a rainy Seaſon, or when it is cloudy Weather, and ſome Hopes of Rain falling ſoon after. As the Fruit ripens at two different Seaſons, *viz.* at *Midſummer*, and at *Chriſtmas*, the Plantation may be made at either of thoſe; but the chief Care muſt be to chooſe ſuch Nuts as are perfectly ripe and ſound, otherwiſe the whole Trouble and Expence will be loſt. The Manner of planting the Nuts is, to make three Holes in the Ground, within two or three Inches of each other, at the Place where every Tree is to ſtand; and into each of theſe Holes one ſound Nut planted about two Inches deep, covering them gently with Earth. The Reaſon for putting in three Nuts at every Place is, becauſe they ſeldom all ſucceed; or, if moſt of them grow, the Plants will not be all equally vigorous; ſo that when the Plants have had one Year's Growth, it is very eaſy to draw up all weak unpromiſing Plants, and leave the moſt vigorous; but in doing this, great Care ſhould be had not to injure or diſturb the Roots of the remaining Plants in drawing out.

It is very proper to obſerve, that the Chocolate Nuts will not retain their growing Faculty long after they are taken from the Trees, ſo that there is no Poſſibility of tranſporting them to any great Diſtance for planting; nor ſhould they be kept long out of the Ground, in the natural Places of their Growth. There are ſome Authors who have written the Hiſtory of this Tree, and diſtinguiſh three different Sorts of the Nuts, from the Colour of their Skins, one of which is of a whitiſh-green Colour, one of a deep red, and the third of a red and yellow Colour; but theſe are not ſpecifically different, but all ariſe from Seeds of the ſame Tree, as is the Caſe of our Filberts, which differ in the Colour of their Skins, but are of the ſame Colour within, and have the ſame Taſte. There are others, who would diſtinguiſh theſe Nuts by their Size and Form, ſome being large and thick, others almoſt as flat as Beans; but theſe Differences (I have been credibly informed) ariſe from ſome Accident, as thoſe Trees which are young and vigorous, and grow upon a deep rich Soil, will always produce larger and better nouriſhed Fruit, than thoſe which ſtand on a ſhallow dry Ground, and are unthriving Trees: The Age alſo of a Tree makes a great Alteration in the Size of the Fruit; for old Trees are generally obſerved to produce ſmaller and flater Nuts than thoſe which are young, or than the ſame Trees did bear while they were vigorous.

When the Chocolate Trees firſt appear above Ground, they are very tender, and ſubject to great Injuries from the ſtrong Winds, the ſcorching Sun, or great Droughts, for which Reaſon the Planters are obliged to guard againſt all theſe Enemies, firſt, by making choice of a ſheltered Situation, or by planting Trees to form a Shelter; and, if poſſible, to have the Plantation near a River, for the Conveniency of watering the Plants the firſt Seaſon, until they have made ſtrong Roots, and are capable of drawing their Nouriſhment from ſome Depth in the Earth, where they meet with Moiſture. But in order to ſhelter the Plants from the ſcorching Rays of the Sun, they generally plant two Rows of Caſſada between each Row of Chocolate Trees, which will grow about ſeven or eight Feet high, and ſcreen the young Plants from the Violence of the Sun, the firſt Seaſon; after which Time they will be in leſs Danger of Injury therefrom; and the following Seaſon, when the Caſſada is taken up for Uſe, the Ground ſhould be worked between the young Plants, being very careful not to injure their Roots by this Operation. This Method of planting the Caſſada between the young Chocolate Trees, is of great Advantage to the Planter; for when the Roots of the Caſſada are taken up for Uſe, it will defray the Expence of keeping the Ground clean from Weeds, without which the young Plants will come to nothing. The Plantains alſo, which will be fit to cut in about twelve Months after planting, will defray the whole Expence of preparing the Ground, ſo that the Produce of the Chocolate Trees will be neat Profit; for as the Plantains produce Fruit, and decay, they will be ſucceeded by Suckers, which will produce Fruit in eight Months after; whereby there will be a continual Supply of Food for the Negroes, which will more than pay for keeping the Ground wrought, and clear from Weeds, until the Chocolate Trees begin to produce Fruit, which is generally the third Year after planting.

The Planters uſually ſet the Plantain Trees two or three Months before the Chocolate Nuts are ripe, that they may be large enough to afford Shelter to the young Plants when they come up; and the Caſſada is always planted a Month or ſix Weeks before the Chocolate

colate Nuts, for the ſame Reaſon. Some plant Potatoes, others Cucumbers and Melons, or Water Melons, between the Rows of Chocolate Plants; which prevents the Weeds from riſing to injure the young Plants; for as all theſe trail on the Ground, they occupy the whole Surface, and prevent the Weeds from growing: But where this is practiſed, it ſhould be done with great Caution, leſt you injure the young Chocolate Nuts ſo much, that they may never recover it; therefore great Care ſhould be taken to reduce the Shoots of theſe Plants, whenever they approach the Chocolate Trees; otherwiſe they will ſoon greatly injure, if not totally deſtroy them.

In about ſeven or eight Days after the Chocolate Nuts are planted, the young Plants will begin to appear above Ground; when they ſhould be carefully looked over, to ſee if any of them are attacked by Inſects; in which Caſe, if the Inſects are not timely deſtroyed, they will ſoon devour all the young Plants; or if there ſhould be any Weeds produced near the Plants, they ſhould be carefully cut down with a Hoe; in doing which, great Care ſhould be taken that the tender Shoot, nor the Rind of the Bark are not injured. About twenty Days after the Plants have appeared, they will be five or ſix Inches high, and have four or ſix Leaves, according to their Strength. Theſe Leaves are always produced by Pairs, oppoſite to each other, as are alſo the Branches; ſo that they make very regular handſome Heads, if not injured by Winds. In ten or twelve Months they will be two Feet and an Half high, and have 14 or 16 Leaves. By this Time the Caſſada, which was planted between the Rows of Chocolate Plants, will have large Roots fit for Uſe; therefore ſhould be taken up; and the Ground being then wrought over again, will greatly encourage the young Plants.

In two Years time the Plants will have grown to the Height of three Feet and a Half, or ſometimes four Feet; many of which will begin to flower; but the careful Planters pull off all theſe Bloſſoms; for if they are permitted to remain to produce Fruit, they will ſo much weaken the Trees, that they ſeldom recover Strength again, ſo as to become vigorous. When theſe Plants are two Years and a Half old, they will produce Flowers again; ſome of which are often left to bear Fruit; but the moſt curious Planters pull off all theſe, and never leave any to produce Fruit until the 3d Year; and then but a few, in Proportion to the Strength of the Trees; by which Method, they always produce larger and better nouriſhed Fruit, than thoſe which are ſuffered to bear a larger Quantity; and will continue much longer in Vigour. The 4th Year they ſuffer their Trees to bear a moderate Crop; but they generally pull off ſome Flowers from thoſe which are weak, that they may recover Strength before they are too old.

From the time the Flowers fall off, to the Maturity of the Fruit, is about four Months. It is eaſy to know when the Fruit is ripe, by the Colour of the Pods, which become yellow on the Side next the Sun. In gathering the Fruit, they generally place a Negro to each Row of Trees; who, being furniſhed with a Baſket, goes from Tree to Tree, and cuts off all thoſe which are ripe, leaving the others a longer time to ripen. When the Baſket is full, he carries the Fruit, and lays it in a Heap at one End of the Plantation; where, after they have gathered the whole Plantation, they cut the Pods lengthways, and take out all the Nuts; being careful to diveſt them of the Pulp which cloſely adheres to them; and then they carry them to the Houſe, where they lay them in large Caſks, or other Veſſels of Wood, raiſed above-ground, and cover them with Leaves of the *Indian* Reed and Mats, upon which they lay ſome Boards, putting ſome Stones thereon to keep them down cloſe, in order to preſs the Nuts. In theſe Veſſels the Nuts are kept four or five Days; during which Time, they muſt be ſtirred and turned every Morning; otherwiſe they will be in Danger of periſhing from their great Fermentation. In this Time they change from white to a dark red or brown Colour. Without this Fermentation, they ſay the Nuts will not keep; but will ſprout, if they are in a damp Place, or ſhrivel and dry too much, if expoſed to Heat.

After the Nuts have been thus fermented, they ſhould be taken out of the Veſſels and ſpread on coarſe Cloths, and expoſed to the Sun and Wind, but at Night, or in rainy Weather, they muſt be taken under Shelter, otherwiſe the Damp will ſpoil them. If the Weather proves fair, three Days time will be long enough to dry them, provided they are carefully turned from Time to Time, that they may dry equally on every Side. When they are perfectly dry, they may be put up in Boxes or Sacks, and preſerved in a dry Place until they are ſhipped off, or otherwiſe diſpoſed of. The freſher theſe Nuts are, the more Oil is contained in them; ſo that the older they are, the leſs they are eſteemed.

Theſe Trees do not produce their Fruit on the young Branches, or at their Extremities, as moſt other Trees do; but from the Trunk, and the larger Branches, come out the Buds for Flowers and Fruit. While the Trees are young, they do not produce Fruit in great Plenty; for before they are eight Years old, they reckon it a good Crop to have twenty-eight or thirty Pods on each Tree at one Gathering, eſpecially that at *Midſummer*; which is always a much worſe Crop than the *Chriſtmas* Seaſon, occaſioned by the much greater Drought of the Spring; Autumn being the rainy Seaſon. When the Trees are full grown and vigorous, they will ſometimes produce two hundred, or two hundred and forty Pods, at one Seaſon; which will make ten or twelve Pounds of Chocolate, when dried; ſo that it is a very profitable Commodity, and can be managed with very little Charge, when compared with Sugar. I have been credibly informed by a Perſon of great Worth and Integrity, who reſided ſome Years in *America*, that he has ſeen as much Chocolate gathered from one Tree in a Year, as hath been worth thirty Shillings *ſterling* on the Spot: So that the Trouble of gathering, and preparing for the Market, being much leſs than for many other Commodities which are manufactured in the *Britiſh* Colonies, it is ſurpriſing it ſhould be neglected; eſpecially as it yields ſo large a Share of Suſtenance to the wealthier Inhabitants of thoſe Colonies, that they cannot live comfortably without it; and purchaſe it from the *French* and *Spaniards* at a conſiderable Price.

The Chocolate Trees, if planted on a good Soil, and properly taken care of, will continue vigorous and fruitful twenty-five or thirty Years: Therefore the Charge of cultivating a Plantation of theſe Trees, muſt be much leſs than that of Sugar; for although the Ground between the Rows of Plants will require to be often hoed and wrought, yet the firſt working of Ground to make a new Plantation of Sugar, Indigo, Caſſada, &c. is a larger Expence. Beſides, Sugar Canes require as much Labour in their Cultivation, as any Plant whatever; and ſince the Inſects which deſtroy the Canes, have ſpread ſo much in the *Britiſh* Colonies, nothing is a more uncertain Crop than Sugar; for which Reaſon, I think it would be greatly worth thoſe Planters Care, who are poſſeſſed of proper Lands for the Chocolate Trees, to make ſome ſmall Trials, to be convinced of the Truth of this Fact.

The Leaves of theſe Trees being large, make a great Litter upon the Ground when they fall; but this is not injurious, but rather of Service to the Trees; for the Surface of the Ground being covered with them, they preſerve the Moiſture, prevent its evaporating, and are of great Uſe to the young tender Roots, which are juſt under the Surface; when the Leaves are rotten, they may be buried in digging the Ground, and will make good Manure. Some Planters let the Pods, in which the Chocolate is incloſed, lie and rot in a Heap (after they have taken the Nuts out) which they alſo ſpread on the Ground inſtead of Dung. Either of theſe Manures are very good, provided they are well rotted before they are laid on the Ground; and great Care ſhould be had, that no Vermin be carried on the Plantation with the Dung.

Beſides the ordinary Care of digging, hoeing, and manuring the Plantations of Chocolate Trees, it is alſo requiſite, in order to their doing well, to prune the decayed Branches off, and to take away ſmall ill placed Branches, where-ever they are produced. But you ſhould be cautious how this Work is performed; for there ſhould be no vigorous Branches ſhortened, nor any large Amputations made on theſe Trees; becauſe they abound with a ſoft glutinous milky Juice, which will flow out for many Days where they are wounded, which greatly weakens the Trees. However, the Branches whoſe extreme Parts are decayed, ſhould be cut off, to prevent the Infection from proceeding farther; and ſuch Branches as are much decayed, ſhould be taken off cloſe to the Stem of the Tree; this ſhould be performed in dry Weather, ſoon after the Crop of Fruit is gathered.

Some may imagine, that what I have directed, is a tedious laborious Work, and not to be performed by a few Slaves: But this is a great Miſtake, for I have been credibly informed, that five or ſix Negroes will cultivate a Plantation of ten thouſand of theſe Trees, provided they are properly inſtructed; which is a ſmall Number, when compared to the Quantity neceſſary to cultivate a Sugar Plantation of the like Extent of Ground. And when the Profits of both are compared, there will be a great Difference: For, ſuppoſing we ſet the Price of five Shillings, *per Ann.* for the Produce of each Tree, when grown, (which I am of Opinion is very moderate, conſidering what has been related); then a Plantation of ten thouſand Trees will produce twenty-five hundred Pounds a Year; which, managed by ſix or ſeven Negroes, without the Expence of Furnaces, &c. is a much greater Profit than, I think, can be drawn from any other Production.

In order to cultivate this Plant in *Europe*, by way of Curioſity, it will be neceſſary to have the Nuts planted into Boxes of Earth (in the Countries where they grow) ſoon after they are ripe; becauſe, if the Nuts are ſent over, they will loſe their growing Quality, before they arrive. Theſe Boxes ſhould be placed in a ſhady Situation, and muſt be frequently watered, in order to forward the Vegetation of the Nuts. In about a Fortnight after the Nuts are planted, the Plants will begin to appear above-ground; when they ſhould be carefully watered in dry Weather, and protected from the violent Heat of the Sun, which is very injurious to theſe Plants, while they are young: They ſhould alſo be kept very clear from Weeds; which, if ſuffered to grow in the Boxes, will ſoon overbear and deſtroy the Plants. When they are grown ſtrong enough to tranſport, they ſhould be ſhipped and placed where they may be ſcreened from ſtrong Winds, ſalt Water, and the violent Heat of the Sun. During their Paſſage they muſt be frequently refreſhed with Water; but it muſt not be given them in great Quantities, leſt it rot the tender Fibres of their Roots, which will deſtroy the Plants; and when they come into a cool Latitude, they muſt be carefully protected from the Cold, when they will not require ſo frequently to be watered: For in a moderate Degree of Heat, if they have gentle Waterings once a Week, it will be ſufficient.

When the Plants arrive in *England*, they ſhould be carefully taken out of the Boxes, and each tranſplanted into a Pot filled with light rich Earth, and plunged into a moderate hot Bed of Tanners Bark; being careful to cover the Glaſſes in the Heat of the Day, to ſcreen the Plants from the Sun: They muſt alſo be frequently watered; but it muſt be done with Caution, not to rot their Roots. In this hot Bed, the Plants may remain till *Michaelmas*, when they muſt be removed into the Bark Stove, and plunged into the Tan, in the warmeſt Part of the Stove. During the Winter Seaſon the Plants muſt be frequently refreſhed with Water; it muſt be given in ſmall Quantities; but in Summer they will require a more plentiful Share. Theſe Plants are too tender to live in the open Air in this Country, even in the hotteſt Seaſon of the Year; therefore muſt conſtantly remain in the Bark Stove, obſerving in very warm Weather, to let in a large Share of freſh Air to them, and in Winter to keep them very warm. As the Plants increaſe in Bulk, they ſhould be ſhifted into larger Pots; in doing which, particular Care muſt be taken not to tear or bruiſe their Roots, which often kills the Plants; nor muſt they be placed in Pots too large; becauſe that is a ſlow, but ſure Death to them. The Leaves of theſe Plants muſt be frequently waſhed, to clear them from Filth; which they are ſubject to contract by remaining conſtantly in the Houſe; and this becomes an Harbour for ſmall Inſects, which will infeſt the Plants, and deſtroy them, if not timely waſhed off. If theſe Rules are duly obſerved, the Plants will thrive very well, and may produce Flowers in this Climate: But it will be very difficult to obtain Fruit from them; for, being of a very tender Nature, they are ſubject to many Accidents in a cold Country.

CACHRYS. *Tourn. Inſt.* 325. *Lin. Gen. Plant.* 304. We have no *Engliſh* Name for this Plant.

The *Characters* are,

It hath an umbellated Flower, the great or general Umbel being compoſed of many ſmaller; the Involucrum of both is compoſed of many narrow Spear-ſhaped Leaves; the great Umbel is uniform. The Flower hath five Spear-ſhaped erect Petals, which are equal. It hath five ſingle Stamina the Length of the Petals, terminated by ſingle Summits. The turbinated Germen is ſituated under the Receptacle, ſupporting two Styles crowned by roundiſh Stigma. The Empalement afterward becomes a large oval blunt Fruit dividing in two Parts, each having one large fungous Seed, convex on one Side, and plain on the other.

The *Species* are,

1. CACHRYS *foliis pinnatis, foliolis linearibus trifidis, fructu lævi.* Cachrys with very narrow pinnated trifid Leaves and a ſmooth Fruit. This is the *Cachrys ſemine fungoſo lævi foliis Ferulaceis. Mor. Umb.* 62. Cachrys with a ſmooth fungous Seed, and Giant-fennel Leaves.

2. CACHRYS *foliis pinnatis, foliolis linearibus planis acutis, fructu rugoſo.* Cachrys with narrow, plain, pinnated acute Leaves, and a rough Fruit. This is the *Cachrys ſemine fungoſo ſulcato aſpero, foliis peucedani latiuſculis. Mor. Umb.* 62. Cachrys with a fungous furrowed rough Seed, and broadiſh Hog's-fennel Leaves.

3. CACHRYS *foliis pinnatis foliolis acutis multifidis. Lin. Sp. Pl.* 246. Cachrys with pinnated, multifid Leaves, which are acute. *Cachrys ſemine fungoſo ſulcato, plano minore foliis peucedani. Mor. Umb.* 62. Cachrys with a ſmaller, plain, furrowed Seed, and Hog's-fennel Leaves.

4. CACHRYS *ſemine fungoſo ſulcato plano majore foliis peucedani anguſtis. Mor. Umb.* 62. Cachrys with a large, plain, fungous, furrowed Seed, and narrow Hog's-fennel Leaves.

5. CACHRYS *foliorum impari lobato, hirſuto, ſemine fungoſo ſulcato plano.* Cachrys with hairy Leaves, terminated with an odd Lobe, and a plain fungous channeled Seed. *Cachrys Ungarica Panacis folio. Tourn. Hiſt.* 325. *Hungarian* Cachrys with an All-heal Leaf.

The 1ſt ſort hath a thick fleſhy Root which ſtrikes deep in the Ground; from which ſprings out many narrow winged Leaves reſembling thoſe of Giant-fennel, which ſpread near the Ground, from between theſe ariſe a hollow fungous Stalk about two Feet high, terminated by a large Umbel of yellow Flowers, which are ſucceeded by oval ſmooth fungous Fruit, dividing into two Parts, each incloſing an oblong Seed.

The 2d Sort hath a large firm ſweet ſmelling Root, which ſends out ſeveral pinnated Leaves like thoſe of Hog's-fennel, but ſhorter. The Stalk is ſmooth jointed, riſes four or five Feet high, and is terminated by large Umbels of yellow Flowers, like thoſe of Dill; theſe are ſucceeded by oblong fungous channeled Seeds which are rough.

The 3d Sort hath a thick fleſhy Root like Fennel, which runs deep in the Ground, ſending out ſeveral narrow pinnated Leaves, ending in many Parts; between theſe ariſes a ſmooth jointed Stalk, about three Feet high, terminated by large Umbels of Flowers, and ſucceeded by ſmaller fungous plain Seeds which are furrowed.

The 4th Sort hath very thick Roots, which ſtrike deep in the Ground, ſending out very narrow pinnated Leaves, like thoſe of Hog's-fennel. The Stalk riſes 5 or 6 Feet, and is jointed like thoſe of Fennel, terminated by large Umbels of yellow Flowers, which are ſucceeded by large oval fungous Seeds, deeply furrowed.

The firſt Sort grows naturally in the South of *France* and *Spain*; the ſecond and third in *Italy*; the fourth in *Sicily*, and the fifth in *Hungary*.

Theſe Plants are all propagated by Seeds, ſown ſoon after they are ripe; for if kept out of the Ground until Spring, they often miſcarry; and when they ſucceed, never come up until the Spring after; ſo that by ſowing them in Autumn, a whole Year is ſaved, and they ſeldom miſcarry. Theſe Seeds ſhould be ſown on a ſhady Border, where the Plants are to remain; for the Plants, having long Tap Roots, will not bear tranſplanting ſo well as many other Kinds. The Diſtance for ſowing their Seeds ſhould be three Feet apart; ſo that if each Kind is ſown in a Drill, when the Plants come up, they may be thined; leaving two of the moſt promiſing Plants of each Kind to remain. Theſe Plants will begin to appear early in *April*, when they muſt be carefully cleared from Weeds; and in dry Weather ſhould be gently watered, which greatly promotes their Growth the firſt Year; after which they will require no farther Care but to keep them clean from Weeds, and every Spring to dig the Ground carefully between them, ſo as not to injure the Roots.

Theſe Plants decay to the Ground every Autumn, and come up again in Spring: They commonly flower the Beginning of *June*, and their Seeds are ripe in *September*: Their Roots ſometimes run down three or four Feet deep in the Earth, provided the Soil be light, and are often as large as Parſneps: They will continue many Years, and if the Soil is moiſt and rich, they will annually produce good Seeds; but when they grow on a dry Soil, the Flowers commonly fall away, and are not ſucceeded by Seeds.

The *Hungarians* in the Neighbourhood of *Erlaw*, and thoſe who border on *Tranſylvania*, *Servia*, &c. eat the Root of the fifth Species, in a Scarcity of Corn, for want of other Bread.

CACTUS. *Lin. Gen. Pl.* 539. *Melocactus. Tourn.*

The *Characters* are,

The Empalement of the Flower is of one Leaf, tubulous, ſhort, and cut into ſix Parts. The Flower is compoſed of ſix Petals, which ſpread open at Top, and reſts upon the Embryo; it hath ſix long ſlender Stamina, terminated by erect Summits. The oval Germen which is ſituated below the Petals, ſupports a cylindrical Style, crowned by a blunt Stigma; it becomes a pyramidal fleſhy Fruit with one Cell, filled with ſmall angular Seeds ſurrounded with Pulp.

The *Species* are,

1. CACTUS *ſubrotundus quatuordecem angularis. Hort. Cliff.* 181. Roundiſh *Cactus* with fourteen Angles. This is the *Melocactus Indiæ occidentalis. C. B. P.* 384. and the *Echinomelocactus. J. B.* 3. 93. Hedgehog Melon Thiſtle, commonly called Great Melonthiſtle.

2. CACTUS *ſubrotundus quinquedecem angularis, angulis in ſpiram intortis, ſpinis erectis.* Roundiſh *Cactus* or Melon Thiſtle, with fifteen Angles ſpirally twiſted, and erect Spines. *Melocactus purpureus ſtriis in Spiram in-*

tortis. Plum. Purple Melon Thiſtle with Spiral intorted Ribs.

3. Cactus *ſubrotundus quinquedecem angularis, ſpinis latis recurvis creberrimis.* Roundiſh Melon Thiſtle with 15 Angles, and broad recurved Spines ſet very cloſe.

4. Cactus *ſubrotundus quatuordecem angularis, ſpinis longis recurvis albidis.* Roundiſh Melon Thiſtle with 14 Angles, and long white recurved Spines.

5. Cactus *ſubrotundus tectus tuberculis ovatis barbatis Hort. Cliff.* 181. Roundiſh *Cactus* cloſely covered with bearded Tubercles. *Melocactus Americana minor. Boerh. Ind. alt.* 2. 84. Smaller *American* Melon Thiſtle.

6. Cactus *proliferus ſubrotundus, tectus tuberculis ovatis, barbatis longis albidis.* Roundiſh prolifick *Cactus* with oval Tubercles cloſely joined, having long white Beards, commonly called Small Childing Melon Thiſtle.

Theſe Plants are Natives of the *Weſt-Indies*, where there are more Sorts than are here enumerated. There have been about four of the large Kinds brought to *England*, ſome of which have been crowned with a prickly brown Cap, in Form of one of thoſe Fur Caps, which are worn by the *Turks*; and others, which have been deſtitute of theſe Caps, although the Plants were full as large as thoſe which had them; therefore ſome Perſons have ſuppoſed them to be diſtinct Species, eſpecially ſince theſe have been many Years preſerved in Gardens, and no Appearance of any Caps as yet have been produced; but as theſe have not been propagated by Seeds, it is difficult to determine, if they are eſſentially different. Thoſe which have Caps, produce their Fruit in Circles round the upper Part of the Cap; whereas the ſmaller Sorts produce their Fruit from between the Tubercles, round the Middle of the Plant: and in ſome Figures of the larger Sorts, the Fruit is repreſented as coming out near the Crown of the Plant; ſo that if a ſkilful Botaniſt was to examine theſe Plants in the Places of their Growth, there would probably be found a much greater Variety than is at preſent known.

Theſe ſtrange Plants commonly grow upon the ſteep Sides of Rocks in the warmeſt Parts of *America*, where they ſeem to be thruſt out of the Apertures of the Rocks, having little or no Earth to ſupport them, their Roots ſhooting down into the Fiſſures of the Rock to a conſiderable Depth, ſo that it is troubleſome to get the Plants up, eſpecially as they are ſo ſtrongly armed with Thorns as to render it very dangerous to handle them; as theſe Plants delight in rocky Places, they ſeldom live long when they are tranſplanted into better Soil.

The great Sorts were formerly brought over in much greater Plenty than of late; but the greateſt Part of them were deſtroyed by the Unſkilfulneſs of thoſe who had the Care of them in the Voyage; for, by giving them Water, they generally cauſed them to rot before they were landed; and ſome of thoſe which appeared to be ſound, have been ſo replete with Moiſture, as to rot ſoon after they were placed in the Stoves; therefore whoever propoſes to bring theſe Plants from Abroad, ſhould be very careful to take up their Roots as entire as poſſible, and to plant them in Tubs filled with Stones and Rubbiſh, mixing very little Earth with it, and to put three or four Plants in each Tub, in Proportion to their Sizes; for if they are placed cloſe together, it will ſave Room; and as they do not increaſe in their Growth during their Paſſage, there need not be any Room allowed them for that Purpoſe. There ſhould be ſeveral Holes bored through the Bottom of theſe Tubs, to let the Moiſture paſs off; and if they are placed in the Tubs, a Month before they are put on board the Ship, they will in that Time have made new Roots, which will be the moſt ſecure Method to have them ſucceed; during their Continuance in the Country, they ſhould have no Water, unleſs the Seaſon ſhould prove very hot and dry; and, in that Caſe, it ſhould be given ſparingly; but after they are put on board the Ship, they muſt not have any Moiſture whatever; therefore it will be a good Method to cover the Plants with Tarpaulin, to keep off the Spray of the Sea in bad Weather, and to expoſe them at all Times to the open Air, when the Sea is calm. By obſerving theſe Directions, the Plants may be brought to *England* in good Health, provided they are brought in Summer.

Some of the large Plants which have been brought to *England*, have been more than a Yard in Girt, and near two Feet high, including their Caps; but I have been informed by ſeveral Perſons who have reſided in the *Weſt-Indies*, that there are Plants near twice as large.

The 3d Sort was brought to *England* by Dr. *William Houſtoun*, who procured the Plants from *Mexico*; but as they had a long Paſſage, and received Wet, they were decayed before they arrived, from the Remains of them which were left, they appeared to be the moſt ſingular of all the Species yet known. This has two Orders of Thorns; one of which are ſtrait, and ſet on at the Joints in Cluſters, ſpreading out from the Center each Way like a Star; and in the Middle of each Cluſter is produced one broad flat Thorn, near two Inches in Length, which ſtands erect, is recurved at the Point, and of a browniſh red Colour. Theſe Thorns are, by the inhabitants of *Mexico*, ſet in Gold or Silver, and made uſe of for picking their Teeth; and the Plant is by them called *Viſnaga*, *i. e.* Toothpick.

The Sort with ſpiral Ribs, and that with white Spines, I received from *Antigua*, with the common Sort; but whether theſe are only accidental Varieties, ariſing from the ſame Seeds, or real different Species, I cannot take upon me to determine, ſince, in this Country, they are very rarely propagated by Seeds; nor could I obſerve, in the ſeveral Years I have had theſe Plants under my Care, there was the leaſt Diſpoſition in either of them to produce Fruit; when, at the ſame Time, the common large Sort produced Plenty of Fruit out of their Caps every Year, from the Seeds of which I raiſed ſome young Plants; but although ſome of theſe have grown to a conſiderable Size, yet none of them have as yet produced Caps, and conſequently no Fruit.

The 5th Sort produces Quantities of Fruit annually; and as the Seeds grow very readily, it is now very common; for if the Fruit is permitted to drop upon the Earth of the Pots, and that is not diſturbed, Plenty of Plants will come up without any farther Trouble; theſe Seedling Plants may be taken up as ſoon as they are of a proper Size to remove, and planted 6 or 7 of them into a ſmall Halfpenny Pot, where they may ſtand one Year; by which Time they will be large enough to be each planted in a ſeparate Pot, and afterward they will make great Progreſs, eſpecially if they are plunged into a hot Bed of Tanners Bark in Summer; for although this Sort is much more hardy than the large Kind, and may be preſerved in a moderate Stove, yet the Plants will not make near the Progreſs as thoſe which are kept in a greater Degree of Heat. This Sort will continue many Years with proper Care, and the Plants will grow a Foot high, or more; but when they are ſo tall, the lower Part of them is not ſo ſightly, their Green being decayed, and the Spines changed to a dark dirty Colour, they appear as if dead; ſo that the upper Part of theſe old Plants only ſeem to have Life; whereas the Plants of middling Size appear healthy from Top to Bottom. The Flowers appear in *July* and *Auguſt*; theſe are ſucceeded by Fruit quite round the Plant, which are of a fine ſcarlet Colour, and continue freſh on the Plants through the Winter, which renders them very beautiful at that Seaſon. In Spring, when the Fruit ſhrivels, and becomes dry, the Seeds will be ripe, and may then be rubed out, and ſown upon the Surface of the Earth in ſmall Pots; which ſhould be plunged in a hot Bed of Tanners Bark to bring up the Plants.

The 6th Sort is but little larger than the 5th, growing nearly in the ſame Form; but produces a great Number of young Plants from the Sides, by which it is increaſed. This Sort produces Tufts of a ſoft white Down, upon the Knobs, and alſo between them at every Joint; which makes the whole Plant appear as if it was covered with fine Cotton. The Flowers of this Sort are produced from between the Knobs, round the Sides of the Plants; which are in Shape and Colour very much like thoſe of the 5th Sort, but larger. Theſe Flowers are not ſucceeded by Fruit, at leaſt all thoſe under my Care, although they have produced Plenty of Flowers for ſome Years; but from the ſame Places where the Flowers have appeared, young Plants have thruſt out the following Seaſon. Theſe young Plants I have taken off, and laying them to dry for two or three Days, I have planted them, and they ſucceeded very well.

All the Species of this Genus are Plants of a ſingular Structure; but eſpecially the larger Kinds of them, which appear like a large fleſhy green Melon, with deep Ribs, ſet all over with ſtrong ſharp Thorns, and when the Plants are cut through the Middle, their Inſide is nothing but a ſoft, green, fleſhy Subſtance, very full of Moiſture. I have been aſſured by Perſons of Credit, who lived in the *Weſt-Indies*, that in Times of great Drought, the Cattle repair to the barren Rocks, which are covered with theſe Plants, and after ripping up the large Plants with their Horns, ſo as to tear off the outſide Skin with the Thorns, they have greedily devoured all the fleſhy moiſt Parts, which afforded them both Meat and Drink; but how any Animal ſhould attack Plants, ſo well defended by ſtrong Thorns, which are as hard and ſtiff as Whalebone, or any other bony Subſtance, is difficult to conceive; nor could any Thing but Diſtreſs for Moiſture tempt them to venture among theſe troubleſome Plants to ſearch for Relief, ſince they muſt encounter with many Difficulties, before they could find a Method of diſlodging the Thorns.

The Fruit of all the Sorts of Melon Thiſtles, are eaten by the Inhabitants of the *Weſt-Indies*; there is ſcarce any Difference in the Fruits of all the Kinds I have yet ſeen, either in Size, Shape, Colour, or Taſte. They are about three Quarters of an Inch in Length, of a taper Form, drawing to a Point at the Bottom next the Plant, but blunt at the Top, where the Empalement of the Flower was ſituated. The Taſte is an agreeable Acid, which is grateful in a hot Country.

All the Sorts of theſe Plants require a very good Stove to preſerve them through the Winter in *England*; nor ſhould they be expoſed to the open Air in Summer, for although they may continue fair to outward Appearance, when expoſed abroad, yet they will imbibe Moiſture, which will cauſe them to rot ſoon after they are removed into the Stove. This is frequently the Caſe of thoſe Plants which are brought from Abroad, which have a fair healthy Appearance at their firſt Arrival, but ſoon after decay, and this happens very ſuddenly; ſcarce any Appearance of Diſorder will be ſeen, till the whole Plant is killed; which, in a few Hours Time, has often been their Fate, when they have been placed in the Stove.

If theſe Plants are plunged into a hot Bed of Tanners Bark in Summer, it will greatly forward them in their Growth; but when this is practiſed, there ſhould be ſcarce any Water given to the Plants, for the Moiſture which they will imbibe from the Fermentation of the Tan, will be ſufficient, and more would cauſe them to rot. The beſt Method to preſerve all the large Kinds is, in Winter, to place the Pots, either upon the Top of the Flues, or, very near them, that they may have the warmeſt Place of the Stove; and during that Seaſon, never give them any Water, but when the Seaſon comes for leaving out the Fire in the Stove, to remove them into a Bed of Tanners Bark, which will ſoon ſet them in a growing State, and recover their Verdure. The Soil in which theſe ſhould be planted, muſt be of a ſandy Nature, and if mixed with ſome dry Lime Rubbiſh, it will be ſtill better. In the Bottom of the Pots ſhould be placed ſome Stones, in order to drain off any Moiſture which may be in the Earth; for as theſe Plants naturally grow upon the hot dry burning Rocks, which have no Earth, and, were it not for theſe Plants, would be abſolutely barren, we muſt imitate their natural Soil as near as poſſible, making ſome Allowance for the Difference of Climate.

The great Sorts may be propagated by Seeds; which muſt be ſown and managed, as the ſmaller Sort; but as the Plants which are raiſed from Seeds in *England*, will be ſome Years in arriving to any conſiderable Size, it will be much the beſt Way to procure ſome Plants from the *Weſt-Indies*; and if they arrive here in any of the Summer Months, that there may be Time for them to get new Root before the Cold comes on in Autumn, they will more certainly ſucceed. When the Plants come over, it will be proper to take them out of the Earth as ſoon as poſſible, and lay them in the Stove, upon the Shelves, to dry 3 or 4 Days; and when they are planted, they ſhould be plunged into a good warm Bed of Tanners Bark, to promote their making new Roots. In this Bed they may remain till the Beginning of *October*, when they muſt be removed into the Stove, and treated in the Manner before directed.

The two ſmall Sorts propagate ſo faſt in *England*, as to render it unneceſſary to Import them; for whoever hath a mind to be ſtocked with them, may be ſoon ſupplied; the 5th Sort from Seeds, and the 6th from the young Plants thruſt out from the Side of the old.

CÆSALPINA. *Plum. Nov. Gen.* 9. Braſiletto.

This Plant was named by Father Plumier, *who diſcovered it, in Honour of* Andreas Cæſalpinus, *an eminent Botaniſt, one of the firſt Writers on a Method of claſſing Plants.*

The *Characters* are.

It hath an Empalement of one Leaf, which is cut into five Segments; the two upper being equal, the two lateral Segments are ſmaller, and the lower one (or Keel) large and fringed. The Flower hath five Petals, ſituated like thoſe of the Butterfly Flowers. It hath ten declining Stamina which are diſtinct, and terminated by roundiſh Summits. It hath an oblong Germen ſupporting a ſingle Style the Length of the Stamina, crowned by a blunt Stigma. The Empalement afterward becomes an oblong compreſſed Pod, with one Cell incloſing three or four compreſſed Seeds.

The *Species* are,

1. Cæsalpina *foliis duplicato-pinnatis, foliolis emarginatis, floribus decandris.* Cæſalpina with doubly winged Leaves, whoſe ſmall Leaves are indented at the End, and Flowers with ten Stamina. This is the *Pſeudo-ſantalum croceum. Sloan. Hiſt. Jam.* Saffron-coloured Baſtard Saunders, commonly called *Braſiletto.*

2. Cæsalpina *foliis duplicato-pinnatis foliolis ovatis integerrimis floribus pentendriis.* Cæſalpina with doubly winged Leaves, whoſe ſmall Leaves are oval and entire, and Flowers with five Stamina. This is the *Cæſalpina polyphylla aculeis horrida. Plum. Nov. Gen.* 28. Many leaved Cæſalpina with horrid Thorns.

The 1ſt Sort is the Tree which affords the *Braſiletto* Wood, much uſed in Dying. It grows naturally in the warmeſt Parts of *America*, from whence the Wood is imported, and the Demand for it has been ſo great, that there are no Trees left in any of the *Britiſh* Colonies, exceeding 8 Inches in Diameter, and 15 Feet in Height. It hath very ſlender Branches armed with recurved Thorns. The Leaves are winged, branching out into many Diviſions, each being garniſhed with ſmall oval Lobes indented at the Top, and placed oppoſite. The Foot Stalks of the Flowers come out from the Side of the Branch, and are terminated by a looſe pyramidal Spike of white Flowers, ſhaped ſomewhat like thoſe of the Butterfly Kind, having ten Stamina much longer than the Petals, and terminated by roundiſh yellow Summits. The Germen becomes a long compreſſed Pod, with one Cell incloſing ſeveral oval flat Seeds.

The 2d Sort grows naturally in the ſame Countries with the firſt, but is of larger Size: It ſends out many weak irregular Branches, armed with ſhort ſtrong upright Thorns. The Leaves branch out in the ſame Manner, but the Lobes (or ſmall Leaves) are oval and entire. The Flowers are produced in long Spikes, and are variegated with red: Theſe have each but five Stamina, therefore, according to *Linnæus*'s Syſtem, ſhould not be ranged in this Claſs; but as in all the other Characters they agree, I have continued them together.

Theſe Plants are propagated by Seeds, which ſhould be ſown in ſmall Pots filled with light rich Earth early in the Spring, and plunged into a hot Bed of Tanners Bark, obſerving to water the Earth as often as it appears dry, in order to promote the Vegetation of the Seeds; and if the Nights ſhould prove cold, the Glaſſes of the hot Bed ſhould be covered with Mats, to keep the Bed in a moderate Warmth. In about ſix Weeks after, the Plants will begin to appear, when they muſt be carefully cleared from Weeds, and frequently refreſhed with Water; and, in warm Weather, the Glaſſes of the hot Bed ſhould be raiſed in the middle of the Day, to admit freſh Air to the Plants, which will greatly ſtrengthen them, otherwiſe they are apt to draw up weak. When the Plants are about 3 Inches high, they ſhould be carefully taken out of the Pots, and each tranſplanted into a ſeparate ſmall Pot filled with freſh light Earth, and plunged into the hot Bed again, obſerving to water, and ſcreen them from the Heat of the Sun, until they have taken new Root; after which, the Glaſſes of the hot Bed ſhould be raiſed every Day, in Proportion to the Heat of the Weather, to admit freſh Air to the Plants; and they muſt be duly watered, and kept clear from Weeds. In this hot Bed the Plants may remain till Autumn, when they ſhould be removed into the Stove, and plunged into the Bark Bed, where they may have Room to grow. Theſe Plants being tender, ſhould always be kept in the Bark Stove, and have a moderate Share of Heat in the Winter; and being placed among other tender exotick Plants of the ſame Country, will afford an agreeable Variety.

CAINITO. *See* Chryſophyllum.

CAKILE, Sea Rocket. *See* Bunias.

CALABA, *Indian* Maſtich Tree. *See* Cornus.

CALAMINTHA. *See* Meliſſa.

CALCEOLUS, Ladies Slipper. *See* Cypripedium.

CALENDULA. *Lin. Gen. Pl.* 885. *Caltha. Tourn. Calendula, Raii Meth. Plant.* 36. Marigold.

The *Characters* are,

It hath a compound radiated Flower, conſiſting of hermaphrodite and female Florets, included in a common ſingle Empalement, the Border or Rays being compoſed of female Florets, which are ſtretched out on one Side like a Tongue, which forms the Ray; theſe have no Stamina, but an oblong three cornered Germen, ſupporting a ſlender Style, crowned by two reflexed Stigma. The hermaphrodite Flowers, which are in the Center, and compoſe the Diſk, are tubulous and quinquefid, having five ſhort ſlender Stamina terminated by cylindrical Summits. The Germen is ſituated under the Petal, ſupporting a ſlender Style crowned by an obtuſe bifid Stigma. Theſe Flowers are barren, but the female Flowers are each ſucceeded by one oblong incurved Seed, with angular Membranes.

The *Species* are,

1. Calendula *foliis lineari-lanceolatis ſemiamplexicaulibus, ſeminibus echinatis.* Marigold with narrow Spear-ſhaped Leaves, half embracing the Stalk, and prickly Seeds. *Caltha arvenſis. C. B. P.* Field Marigold; and *Caltha minima. J. B.* The leaſt Marigold.

2. Calendula *foliis lanceolatis glabris, radiis florum latioribus minimè dentatis.* Marigold with ſmooth Spear-ſhaped Leaves, the Rays of the Flower broad, and a little indented. This is the *Caltha media folio longo cinereo, flore pallido. Bob.* Middle Marigold with a long Aſh-coloured Leaf, and a pale Flower.

3. Calendula *ſeminibus radii cymbiformibus echinatis, diſci bicornibus. Hort. Cliff.* 425. Marigold with Boat-ſhaped prickly Seeds in the Border, and thoſe in the

the Center bicorned. *Caltha vulgaris.* Common Marigold.

4. Calendula *foliis lanceolatis denticulatis, pedunculis filiformibus. Hort. Upſal.* 274. Marigold with Spear-ſhaped indented Leaves, and ſlender Foot Stalks. This is the *Caltha Africana flore intus albo extus violaceo. Tourn. Inſt. R. H.* 499. *African* Marigold with a Flower white within, and Violet Colour without.

5. Calendula *foliis lanceolatis ſinuato-dentatis caule nudo. Lin. Sp. Plant.* 922. Marigold with ſinuated indented Spear-ſhaped Leaves, and a naked Stalk. This is the *Caltha Africana flore intus albo, extus leviter violaceo, ſemine plano cordato. Boerh. Ind. alt.* 1. *p.* 113. *African* Marigold with a Flower white within, a light Violet Colour without, and flat Heart-ſhaped Seeds.

6. Calendula *foliis lanceolatis dentatis pedunculis ſupernè incraſſatis. Hort. Cliff.* 274. Marigold with indented Spear-ſhaped Leaves, and the upper Part of the Foot Stalk ſwelling. This is the *Cardiſpermum Africanum pubeſcens. Vaill. Mem. Acad. Sc.* 1724. *African* Heart Seed with downy cut Leaves and a ſmall Flower.

7. Calendula *foliis linearibus ſubintegerrimis caule ſubnudo. Lin. Sp. Plant.* 922. Marigold with narrow entire Leaves, and a naked Stalk. This is the *Caltha Africana foliis Croci anguſtis, florum petalis externè purpuraſcentibus, internè albis. Boerh. Ind. alt.* 1. p. 113. *African* Marigold with narrow Saffron Leaves, the Petals of the Flower purpliſh without, and white within.

8. Calendula *foliis obverſè ovatis denticulatis, caule fruticoſo perenni. Prod. Leyd.* 531. Marigold with obverſe oval indented Leaves, and a perennial ſhrubby Stalk.

9. Calendula *foliis oppoſitis pinnatifidis aſperis, ſubtus incanis, ramis decumbentibus, pedunculis nudis.* Marigold with rough pinnatifid Leaves, growing oppoſite, which are white on their under Side, trailing Branches, and naked Foot Stalks. *Caltha Americana flore luteo. Houſt. American* Marigold with cut Leaves, and a yellow Flower.

10. Calendula *caule erecto ramoſo, foliis oblongis oppoſitis hirſutis, floribus lateralibus.* Marigold with an upright branching Stalk, oblong hairy Leaves growing oppoſite, and Flowers proceeding from the Sides of the Stalk. This is the *Caltha Americana erecta, & hirſuta, flore parvo ochroluco. Houſt. Mſſ.*

The 1ſt Sort grows naturally in the South of *France, Spain,* and *Italy*; it riſes with a ſlender branching Stalk, which ſpreads near the Ground, and is garniſhed with narrow, Spear-ſhaped, hairy Leaves, half ſurrounding the Stalk at their Baſe; the Flowers are produced at the Extremity of the Branches, upon long naked Foot Stalks; theſe are very ſmall, and of a pale yellow Colour; the Rays are very narrow, as are alſo the Leaves of the Empalement. The Seeds are long, narrow, and on their Outſide armed with Prickles. The Root is annual, and periſhes ſoon after the Seeds are ripe. If the Seeds are permitted to ſcatter, there will be a freſh ſupply of young Plants: So that from *May,* when the Flowers firſt appear, till the Froſt puts a Stop to them, there will be a Succeſſion of Plants in flower. Several Botaniſts ſuppoſe the common Marigold, cultivated in Gardens, to be only a Variety of this, ariſing from Culture; but I have cultivated this in the Garden more than thirty Years, without finding the leaſt Alteration; therefore cannot doubt of its being a diſtinct Species.

The 2d Sort I gathered in the Garden at *Leyden,* where it had been ſeveral Years cultivated without altering; the Leaves are ſmooth, and much larger than thoſe of the former, but not ſo large as thoſe of the common Marigold; the Flowers are of a middle Size between them, of a very pale yellow Colour. This is alſo an annual Plant; if the Seeds are permited to ſcatter, there will be a conſtant Supply of young Plants.

The 3d Sort is the common Marigold, which is cultivated for Uſe in the Gardens; this is ſo well known, as to require no Deſcription. Of this there are the following Varieties; *the common ſingle; the double flowering; the largeſt very double Flower; the double Lemon-coloured Flower; the greater and ſmaller Childing Marigold.*

Theſe Varieties are ſuppoſed to have been originally obtained from the Seeds of the common Marigold; but theſe Differences continue, if the Seeds are properly ſaved; nor have I ever obſerved the common Sort approaching to either of theſe, where they have been long cultivated in the greateſt Plenty; but as the two childing Marigolds, and the largeſt double, are ſubject to degenerate, where Care is not taken in ſaving their Seeds, ſo I conclude they are not diſtinct Species. The beſt Way to preſerve theſe Varieties, is to pull up all the Plants, whoſe Flowers are leſs double, as ſoon as they appear, that they may not impregnate the others with their Farina, and ſave the Seeds from the largeſt and moſt double Flowers; the childing Sort ſhould be ſown by itſelf, in a ſeparate Part of the Garden, and the Seeds ſaved from the large Center Flowers only, not from the ſmall ones which come from the Empalement, for the Seeds of theſe are apt to change.

The Seeds may be ſown in *March* or *April,* where the Plants are to remain, and will require no other Culture, but to keep them clean from Weeds and thin the Plants, leaving them ten Inches aſunder, that their Branches may have Room to ſpread. Theſe Plants will begin to flower in *June,* and continue until the Froſt kills them. The Seeds ripen in *Auguſt* and *September,* which, if permited to ſcatter, will furniſh a Supply of young Plants in the Spring; but as theſe will be a Mixture of bad and good, ſo the beſt Method is to ſave the beſt Seeds, and ſow each of the Varieties diſtinct, which is the ſure Way to have them in Perfection.

The 4th Sort grows naturally at the *Cape of Good Hope,* from whence the Seeds were firſt brought to *Holland,* and from thence have communicated to moſt of the curious Gardens in *Europe.* This Plant is annual, and periſhes ſoon after the Seeds are perfected.

The lower Leaves are oblong, Spear-ſhaped, and deeply indented on their Edges; they are fleſhy, and of a pale green Colour. The Stalks are produced on every Side the Root, which decline toward the Ground, and are from ſix to eight Inches long, which are garniſhed with Leaves from the Bottom, to within two Inches of the Top. The Leaves on the Stalks are much narrower, and more indented than thoſe at the Root. The upper Part of the Stalk is very ſlender, upon which reſts one Flower, ſhaped like thoſe of the common Marigold, having a purple Bottom; and the Rays (or Border) of the Flower are of a Violet Colour on their Outſide, and of a pure white within; theſe open when the Sun ſhines, but ſhut up in the Evening, and remain ſo in cloudy Weather; when the Flower decays the Pedicle (or Foot Stalk) becomes weak, and the Head hangs down, during the Formation and Growth of the Seeds; but when they are fully ripe, the Foot Stalk riſes again, and the Head of the Seeds ſtand upright.

The 5th Sort is a Native of the *Cape of Good Hope.* This is alſo an annual Plant, and has much the Appearance of the former, but the Leaves are more deeply indented; the Stalks grow about the ſame Length; the Flower is a little ſmaller, and the Outſide of the Rays of a fainter purple Colour. The Seeds of this are flat and Heart-ſhaped, but the former long and narrow.

The 6th Sort was brought from the ſame Country, and is alſo an annual Plant, the Leaves are much longer than thoſe of either the former Sorts, and broader at the End; they are regularly indented near the Root, but thoſe on the Stalks have but few and ſhallow Indentures. The Stalks are much longer and thicker than thoſe of the former; and at the Top, juſt above the Flower, ſwell larger than below; the Flower is ſmaller than thoſe of the other Sorts, but is of the ſame Colour. Theſe Plants flower in *June*, *July*, and *Auguſt*, and their Seeds ripen about ſix Weeks after; ſo that they muſt be gathered at different Times, as they come to Maturity.

The Seeds of theſe Plants ſhould be ſown in Spring, in Borders, where the Plants are deſigned to remain, for they do not bear tranſplanting well; therefore they may be treated in the ſame Manner, and ſown at the ſame Time, with Candy Tuft, Venus Looking Glaſs, and other hardy annual Plants, puting 4 or 5 Seeds in each Patch; if they all grow, there ſhould not be more than two Plants left; after this they require no farther Care, but to keep them clean from Weeds. If the Seeds of theſe Plants are permited to ſcatter, the Plants will come up without Care; and theſe will flower earlier than thoſe which are ſown in the Spring.

The 7th Sort is a Native of the ſame Country. This is a perennial Plant, which divides near the Root, into ſeveral tufted Heads, cloſely covered with long graſſy Leaves, coming out on every Side without Order; ſome of theſe have one or two Indentures on their Edges; but the moſt Part are entire. From between the Leaves ariſe naked Foot Stalks, about nine Inches long, ſuſtaining one Flower at the Top, about the Size of the common Marigold, having a purple Bottom; the Rays are alſo purple without, but of a pure white within. Theſe expand when the Sun ſhines, but always cloſe in the Evening, and in cloudy Weather. The general Seaſon of their Beauty is in *April* and *May*, when they have the greateſt Number of Flowers upon them; but there is a Succeſſion of Flowers till late in the Autumn, though not in ſo great Plenty. This Sort doth not often produce good Seeds in *Europe*, but it is eaſily propagated by Slips taken off from the Heads, in the ſame Manner as is practiſed for Thrift. They may be planted any Time in Summer, in Pots filled with light freſh Earth, which may be plunged into a very moderate hot Bed, to forward their puting out Roots, or the Pots may be ſunk in the Ground up to their Rims, and covered with a Melon Glaſs, which, in the Middle of Summer, will anſwer full as well, but in the Spring or Autumn, the former Method is to be preferred. When theſe are planted, the Glaſſes muſt be ſhaded in the Heat of the Day, and the Slips muſt be frequently refreſhed with Water, but it muſt not be given them too liberally, for much Wet will rot them: after they have got ſtrong Roots, they ſhould be each planted into ſeparate ſmall Pots, filled with freſh light Earth, and placed in a ſhady Situation, till they have taken freſh Root, when they may be placed in the open Air, in a ſheltered Situation, where they may remain till Autumn, and then ſhould be placed in a dry airy Glaſs Caſe, for the Winter Seaſon, or under a common hot Bed Frame; for theſe Plants do not thrive in artificial Heat, they only require Protection from Froſt and Wet, and ſhould enjoy the Air at all Times when the Weather is mild. The Seeds of this Sort are Heart-ſhaped, like thoſe of the 5th. I have had one or two Heads of them ripen in a Seaſon; but this is rare; and if the Seeds are not ſown in Autumn, they ſeldom grow.

The 8th Sort has been introduced into the *Dutch* Gardens from the *Cape of Good Hope.* This was ſent me by Dr. *Van Royen*, Profeſſor of Botany at *Leyden.* It hath a ſlender, ſhrubby, perennial Stalk, which riſes to the Height of ſeven or eight Feet, but requires Support; it ſends out a great Number of weak Branches, from the Bottom to the Top, which hang downward, unleſs ſupported; they are garniſhed with oval Leaves, having ſhort flat Foot Stalks; moſt of theſe are ſlightly indented toward the Top, and many of them are entire; they are of a ſhining green Colour on their upper Side, but paler underneath; the Flowers come out at the End of the Branches, on ſhort naked Foot Stalks, and are in Size and Colour like thoſe of the 6th Sort; theſe are ſometimes ſucceeded by flat Heart-ſhaped Seeds. The Flowers appear all the Summer.

This is eaſily propagated by Cuttings, which may be planted any Time in Summer in a ſhady Border, or otherwiſe ſhaded with Mats in the Heat of the Day: In five or ſix Weeks, theſe will have taken Root, when they ſhould be carefully taken up, and each put into a ſeparate Pot, filled with light ſandy Earth, but not dunged, and placed in the Shade till they have taken freſh Root; then they may be placed with other hardy exotick Plants in a ſheltered Situation, to remain till the Froſt begins, when they muſt be removed into the Green-houſe, placing them near the Windows that they may enjoy the free Air, for this Plant only requires Protection from Froſt. The Earth in which theſe are planted, ſhould be light, but very poor, for in rich Earth they grow too luxuriant, and ſeldom flower.

The 9th Sort was ſent me from *La Vera Cruz*, by the late Dr. *Houſtoun*, where he found it growing naturally in great Plenty. This ſends out many herbaceous Stalks from the Root, which are hairy, and trail on the Ground. The Leaves are placed by Pairs oppoſite; theſe are long, narrow, and indented on their Edges in two or three Places oppoſite to each other, ſo as to appear like three, five, or ſeven Lobes: They are rough, and of a deep green on their upper Side, but hoary on their under; and are covered with ſlender Hairs. From the Diviſions of the Branches and the Wings of the Leaves, come out long naked Foot Stalks, which are terminated by ſingle yellow Flowers, about the Size of thoſe of the Field Daiſy; theſe are ſucceeded by long, flat, rough Seeds. This

Plant is annual; the Seeds muſt be ſown in Spring upon a hot Bed, and when the Plants are fit to remove, they ſhould be planted in Pots filled with light ſandy Earth, and plunged into a hot Bed of Tanners Bark, obſerving to ſhade them until they have taken new Root, then they muſt have Air admitted to them every Day, in Proportion to the Warmth of the Seaſon, and treated as other tender Plants from the ſame Countries. This flowers in *Auguſt*, and the Seeds ripen in *October*.

The 10th Sort riſes with an upright Stalk, about 8 Inches high, ſending out ſlender ſtiff Branches on every Side, thoſe near the Ground being much longer than the upper; theſe are garniſhed with oblong hairy Leaves without Foot Stalks, placed oppoſite. From the Wings of the Stalk, ariſe the Foot Stalk of the Flower, having two ſmall Leaves placed oppoſite, juſt below the Flower, which hath a ſingle Empalement, like the other Species. The Flowers are of a yellowiſh white Colour. This Sort was ſent me with the former from *La Vera Cruz*. It is an annual Plant, and requires the ſame Treatment as the former Sort.

CALF's SNOUT. *See* Antirrhinum.

CALLA. *Lin. Gen. Plant.* 917. *Arum. Tourn. Inſt. R. H.* 158. Wake Robin, or *Ethiopian* Arum.

The *Characters* are,

It hath a large open Spatha of one Leaf, which is oval and Heart-ſhaped ending in a Point, is coloured and permanent. It hath a ſingle upright Spadix, to which the Flowers and Fruit adhere. This hath male and female Flowers, intermixed toward the upper Part of the Club (or Spadix). The male Flowers conſiſt of many very ſhort Stamina, terminated by ſmall yellowiſh Summits; the female Flowers have a compreſſed Style, reſting upon an obtuſe Germen, crowned by a pointed Stigma. Theſe Flowers at their firſt Appearance, have a ſhort green Empalement, which ſoon falls off, leaving the Style naked. The Germen afterward becomes a globular pulpy Fruit, compreſſed on two Sides; incloſing two or three obtuſe Seeds.

We have but one Sort of this Genus, which is cultivated in Gardens, *viz.*

CALLA *foliis ſagittato-cordatis, ſpathâ Cucullatâ, ſpadice ſupernè maſculo. Hort. Cliff.* 436. Calla with Arrow-headed Heart-ſhaped Leaves, a hooded Sheath, and male Flowers ſituated on the upper Part of the Spadix. This is the *Arum* Africanum *flore albo odorato. Par. Bat. Prod. African* Arum with a white ſweet Flower.

This Plant hath thick fleſhy tuberous Roots, which are covered with a thin brown Skin, and ſtrike down many ſtrong fleſhy Fibres into the Ground. The Leaves ariſe in Cluſters, having Foot Stalks more than a Foot long, which are green and ſucculent. The Leaves are ſhaped like the Point of an Arrow, 8 or 9 Inches in Length, and of a ſhining green, ending in a ſharp Point, which turns backward; between the Leaves ariſes the Foot Stalk of the Flower, which is thick, ſmooth, of the ſame Colour as the Leaves, riſes above them, and is terminated by a ſingle Flower, ſhaped like thoſe of the Arum; the Hood or Spatha being twiſted at the Bottom, but ſpreads open at the Top, and is of a pure white Colour. In the Center of this is ſituated the Spadix or Club, which is of an herbaceous yellow Colour, upon which the ſmall herbaceous Flowers are placed, and ſo cloſely joined, as that the male and female Parts are very difficult to diſtinguiſh, without the Aſſiſtance of Glaſſes. When theſe fade, Part of thoſe which are ſituated at the Top of the Club, are ſucceeded by roundiſh fleſhy Berries compreſſed on two Sides, each containing two or three Seeds.

This Plant grows naturally at the *Cape of Good Hope*, but has been long an Inhabitant in the *Engliſh* Gardens. It propagates very faſt by Offsets, which ſhould be taken off the latter End of *Auguſt*, at which Time the old Leaves decay; but this Plant is never deſtitute of Leaves, for before the old ones decay, there are young Leaves produced, which advance in Height all the Winter; but at this Seaſon the Roots are in their moſt inactive State. Theſe Roots have generally a great Number of Offsets about them, ſo that unleſs there is a want of them, the largeſt only ſhould be choſen, which ſhould be ſeparated from all the ſmaller, and each planted in a ſeparate Pot, filled with Kitchen Garden Earth, and placed with other hardy exotick Plants in the open Air till Autumn, when they muſt be removed into Shelter for the Winter Seaſon, during which Time, they muſt not have too much wet, for that will rot the Roots. This Plant is ſo hardy as to live in the open Air in mild Winters, without any Cover, if they are planted in warm Borders, and have a dry Soil; but with a little Shelter in hard Froſt, they may be preſerved in the open Ground very well. It flowers in *May*, and the Seeds ripen in *Auguſt*, but as the Roots increaſe ſo plentifully, few Perſons care to ſow the Seeds, becauſe the young Plants will not flower in leſs than three Years. The Flowers of this Plant have but little Sweetneſs, although by *Herman*'s Title, it ſhould have a very agreeable Odour, but unleſs a Perſon places it near him, it cannot be perceived. I have frequently received the Seeds of this from the *Cape of Good Hope*, but have always found they produced the ſame Sort.

CALLACARPA. *See* Johnſonia.

CALTHA. *Lin. Gen. Plant.* 623. *Populago, Tourn. Inſt. Caltha paluſtris, Raij. Meth.* 78. Marſh Marigold.

The *Characters* are,

The Flower hath no Empalement, but is compoſed of five large oval Petals which ſpread open, and are concave. It hath a great Number of ſlender Stamina, which are ſhorter than the Petals, and terminated by obtuſe erect Summits: In the Center there are ſeveral oblong compreſſed Germen, which have no Styles, but are crowned by ſingle Stigma. The Germen afterward become ſo many ſhort pointed Capſules, containing many roundiſh Seeds.

The *Species* are,

1. CALTHA *foliis orbiculatis crenatis, flore majore.* Marſh Marigold with round crenated Leaves, and a larger Flower. This is the *Populago flore majore. Tourn. Inſt.* 273. *Populago* with a larger Flower.

2. CALTHA *foliis orbiculato-cordatis crenatis flore minore.* Marſh Marigold with round Heart-ſhaped Leaves which are crenated, and a ſmaller Flower.

Theſe two Sorts are ſuppoſed to be the ſame, but I have never obſerved either of them to vary, either in their natural Places of Growth, or when they are removed into a Garden. They both grow upon moiſt boggy Land, in many Parts of *England*, but the firſt is the moſt common; of this there is a Variety, with very double Flowers, which for its Beauty is preſerved in Gardens. This is propagated by parting the Roots in Autumn, and ſhould be planted in a moiſt Soil, and a ſhady Situation; as there are often ſuch Places in Gardens, where few other Plants will thrive, ſo theſe may be allowed to have Room, and during their Seaſon of flowering, will afford an agreeable Variety. The Sort with double Flowers, doth not appear ſo early in the Spring as the ſingle, but continues much longer in Beauty. It flowers in *May*, and if the Seaſon is not very warm, will continue till the Middle of *June*.

CALYX, The Cup incloſing the Flower; it is alſo ſtyled the Empalement.

CAMARA. *See* Lantana.

CAMERARIA. *Plum. Nov. Gen.* 18. *Tab.* 29. *Lin. Gen. Plant.* 264.

This Plant was ſo named by Father *Plumier*, in Honour of *Joachim Camerarius*, a Phyſician and Botaniſt of *Nuremberg*; who publiſhed an Edition of *Matthiolus*, in *Latin* and *High Dutch*, with new Figures of the Plants, and many Obſervations.

The *Characters* are,

The Flower hath a ſhort permanent Empalement of one Leaf cut into five acute Segments at the Top: The Flower is of one Leaf, Salver-ſhaped, having a long cylindrical Tube at Bottom, which is enlarged above, and divided at the Top into five acute Segments, which ſpread horizontally. It hath five ſhort inflexed Stamina, terminated by obtuſe membranaceous Summits. In the Bottom of the Tube are ſituated two roundiſh Germen, having one common Style, which is cylindrical, and the Length of the Stamina, crowned by two Stigma; the under one is orbicular and flat, the other is concave. The Germen becomes two long, taper, leafy Capſules, filled with oblong cylindrical Seeds.

The *Species* are,

1. CAMERARIA *foliis ſubrotundis, utrinque acutis. Hort. Cliff.* 76. *Lin. Sp. Plant.* 210. This is the *Cameraria lato Myrti folio. Plum. Nov. Gen.* 18. *Cameraria* with a broad Myrtle Leaf.

2. CAMERARIA *foliis linearibus. Lin. Sp. Plant.* 210. This is the *Cameraria anguſto linariæ folio. Plum. Nov. Gen.* 18. *Cameraria* with narrow Toad Flax Leaves.

The firſt Sort was ſent me from the *Havanna*, where it grows naturally in great Plenty. This riſes with a ſhrubby Stalk, to the Height of 10 or 12 Feet, dividing into ſeveral Branches, garniſhed with roundiſh pointed Leaves placed oppoſite, and many ſmooth tranſverſe Veins running from the Midrib to the Borders. The Flowers are produced at the End of the Branches in looſe Cluſters, which have long Tubes enlarging gradually upward, and at the Top are cut into five Segments, broad at their Baſe, but end in ſharp Points: The Flower is of a yellowiſh white Colour: After the Flowers are fallen, the Germen become two leafy Capſules joined at their Baſe, and have two ſwelling Protuberances on each ſide at the Bottom, the Middle being extended conſiderably longer; theſe have one Cell, filled with cylindrical Seeds. It flowers in *Auguſt*, but never produces any Seeds in *England*.

The 2d Sort hath an irregular ſhrubby Stalk, which riſes about 8 Feet high, ſending out irregular Branches, garniſhed with very narrow, thin Leaves placed oppoſite at each Joint; theſe have two Ribs running longitudinally through each. The Flowers are produced ſcatteringly at the End of the Branches, and are ſhaped like thoſe of the former, but ſmaller. Both theſe Plants abound with an acrid milky Juice like the Spurge. This Sort grows naturally in *Jamaica*.

Theſe Plants are propagated by Seeds, which muſt be procured from the Places of their Growth. They may alſo be propagated by Cuttings planted in a hot Bed during the Summer Months: They muſt have a Bark Stove, for they are very tender Plants; but in warm Weather muſt have Plenty of Air.

CAMPANIFORM Flowers, ſuch Flowers as in Shape reſemble a Bell.

CAMPANULA, *Tourn. Inſt. Lin. Gen. Plant.* 201. So called, becauſe the Flowers reſemble a little Bell.

The *Characters* are,

The Empalement is divided into five acute Parts, is upright, ſpreading, and reſts upon the Germen. The Flower is of one Leaf ſhaped like a Bell, ſpreading at the Baſe where there are Holes. In the Bottom is ſituated the five cornered Nectarium, which is joined to the Top of the Receptacle. It hath five ſhort Stamina, which are inſerted in the Top of the Valves of the Nectarium, terminated by long compreſſed Summits: Below the Receptacle is ſituated the angular Germen, ſupporting a Style which is longer than the Stamina, and crowned by a thick, oblong, tripartite Stigma. The Empalement afterward becomes a roundiſh angular Capſule, which in ſome Species have three, and in others five Cells, each having a Hole toward the Top, through which the Seeds are ſcattered when ripe.

The *Species* are,

1. CAMPANULA *foliis ovatis glabris ſubſerratis, caule erecto paniculato, ramulis brevibus.* Bell Flower with oval, ſmooth Leaves ſawed below, an upright paniculated Stalk, and ſhort Branches. *Campanula pyramidata altiſſima. Tourn. Inſt.* 109. Talleſt pyramidal Bell Flower.

2. CAMPANULA *foliis radicalibus obovatis, caulinis lanceolato-linearibus ſubſerratis ſeſſilibus remotis. Lin. Sp. Plant.* 164. Bell Flower with lower Leaves oval, and thoſe on the Stalks narrow, Spear-ſhaped, and ſawed, and growing cloſe to the Stalks. This is the *Campanula perſicæfolia. Cluſ. Hiſt.* 171. Peach leafed Bell Flower.

3. CAMPANULA *capſulis quinquelocularibus tectis, calycis ſinubus reflexis. Vir. Cliff.* 16. Bell Flower with a covered Capſule having five Cells, and the Borders of the Cup reflexed. This is the *Campanula hortenſis folio & flore oblongo. C. B. P.* Garden Bell Flower with an oblong Leaf and Flower, called *Canterbury* Bell Flower.

4. CAMPANULA *caule angulato, foliis petiolatis, calycibus ciliatis, pedunculis trifidis. Vir. Cliff.* 16. Bell Flower with an angular Stalk, Leaves having Petals, a hairy Empalement, and a trifid Foot Stalk. This is the *Campanula vulgatior, foliis urticæ vel major & aſperior. C. B. P.* 94. More common, or greater and rougher Bell Flower with Nettle Leaves.

5. CAMPANULA *foliis ovato-lanceolatis, caule ſimpliciſſimo tereti, floribus ſolitariis pedunculatis fructibus cernuis. Vir. Cliff.* 17. Bell Flower with oval Spear-ſhaped Leaves, a ſingle taper Stalk, Flowers growing ſingly upon Foot Stalks, and pendent Fruit. This is the *Campanula maxima foliis latiſſimis. C. B. P.* 94. Greateſt Bell Flower with broadeſt Leaves.

6. CAMPANULA *foliis undulatis radicalibus lanceolato-ovalibus, paniculâ coarctatâ. Hort. Upſal.* Bell Flower

with waved Leaves; thoſe growing near the Stalk oval and Spear-ſhaped, and a compreſſed Panicle. This is the *Campanula radice eſculentâ. H. L.* Bell Flower with an eſculent Root, commonly called *Rampion.*

7. CAMPANULA *caule angulato ſimplici, floribus ſeſſilibus capitulo terminali. Vir. Cliff.* 16. Bell Flower with a ſingle angular Stalk, Flowers growing cloſe, and terminating in a Head. This is the *Campanula pratenſis flore conglomerato. C. B. P.* 94. Meadow Bell Flower with Flowers gathered in Bunches.

8. CAMPANULA *caule ramoſiſſimo diffuſo foliis oblongis ſubcrenatis, calycibus ſolitariis corollâ longioribus, capſulis priſmaticis. Hort. Upſal.* 41. Bell Flower with a very branching diffuſed Stalk, oblong crenated Leaves, ſolitary Flower Cups longer than the Petal, and priſmatick Capſules. *Campanula arvenſis erecta Euphraſiæ luteæ, ſeu Triſſaginis appulæ foliis, H. Cath.* Upright Field Bell Flower with yellow Eye-bright Leaves.

9. CAMPANULA *caule ramoſo foliis ovatis ſeſſilibus, floribus pedunculatis terminatricibus.* This is the *Campanula arvenſis erecta. H. L.* Upright Field Bell Flower.

10. CAMPANULA *caule baſi ſubramoſo ſtricto, foliis oblongis crenatis, calycibus aggregatis corollâ longioribus, capſulis priſmaticis. Lin. Sp. Plant.* 168. This is the *Campanula arvenſis minima erecta. Mor. Hiſt.* 2. 457. Leaſt upright Field Bell Flower, or ſmall Venus Looking Glaſs.

11. CAMPANULA *caule dichotomo, foliis ſeſſilibus utrinque dentatis. Hort. Cliff.* 65. Bell Flower with a Stalk divided in two, and Leaves growing cloſe to the Stalks, which are indented on both Sides. This is the *Campanula minor annua, foliis inciſis. Mor. Hiſt.* 1. 458. Smaller annual Bell Flower with cut Leaves.

12. CAMPANULA *caule ſubdiviſo ramoſiſſimo, foliis linearibus acuminatis. Hort. Cliff.* 66. Bell Flower with a very branching, divided Stalk, and very narrow pointed Leaves. This is the *Campanula pentagonia flore ampliſſimo Thracia. Tourn. Inſt.* 112. Five cornered Bell Flower of *Thrace*, with a very large Flower.

13. CAMPANULA *caule ſimplici, foliis cordatis dentatis amplexicaulibus, floribus ſeſſilibus aggregatis. Hort. Upſal.* 40. Bell Flower with a ſingle Stalk, Heart-ſhaped indented Leaves which embrace the Stalk, and Flowers gathered together and growing cloſe to the Stalk. This is the *Campanula pentagonia perfoliata. Mor. Hiſt.* 2. P. 457. Five cornered perfoliate Bell Flower.

14. CAMPANULA *caule ramoſo, foliis linguiformibus crenulatis margine cartilagineo. Prod. Leyd.* 246. Bell Flower with a branching Stalk, Tongue-ſhaped crenulated Leaves with ſtiff Edges. This is the *Campanula minor Americana, foliis rigidis flore cæruleo patulo. H. L.* 107. Smaller *American* Bell Flower with ſtiff Leaves, and a blue ſpreading Flower.

15. CAMPANULA *foliis haſtatis dentatis oppoſitis petiolatis, capſulis quinquelocularibus. Lin. Sp. Plant.* 168. Bell Flower with Spear-ſhaped, indented Leaves growing oppoſite, and having Foot Stalks, and Capſules with five Cells. This is the *Campanula Canarienſis atriplicis folio, tuberoſâ radice.* Canary Bell Flower with an Orach Leaf, and a tuberous Root.

There are ſeveral other Species of this Genus, ſome of which grow naturally in *England*, and others in the northern Parts of *Europe*, which have but little Beauty, therefore are ſeldom cultivated in Gardens. There are alſo ſeveral Varieties of ſome of the Sorts here mentioned, which I ſhall take Notice of in their proper Place; but as they are not diſtinct Species, I have omitted them in the above Liſt.

The firſt Sort hath thick tuberous Roots which are milky; this ſends out three or four ſtrong, ſmooth, upright Stalks, which riſe near four Feet high, garniſhed with ſmooth oblong Leaves, whoſe Edges are a little indented. The lower Leaves are much broader than thoſe which adorn the Stalks. The Flowers are produced from the Side of the Stalks, and are regularly ſet on for more than Half the Length of the Stalks, forming a ſort of Pyramid; theſe are large, open, and ſhaped like a Bell. The moſt common Colour of the Flowers is a light Blue; there have been ſome with white Flowers, but the latter is moſt eſteemed.

This Plant is cultivated to adorn Halls, and to place before Chimnies in Summer, when in flower, for which Purpoſe there is no Plant more proper; for when the Roots are ſtrong, they will ſend out four or five Stalks, which will riſe as many Feet high, and are garniſhed with Flowers great Part of their Length. Theſe upright Stalks ſend out ſome ſhort Side Branches, which are alſo adorned with Flowers, ſo that by ſpreading the upright Stalks to a flat Frame compoſed of ſlender Sticks (as is uſually practiſed) the whole Plant is formed into the Shape of a Fan, and will ſpread near the Width of a common Fire Place. When the Flowers begin to open, the Pots are removed into the Rooms, where, being ſhaded from the Sun, and kept from the Rain, the Flowers will continue long in Beauty, and if the Pots are every Night removed into a more airy Situation, but not expoſed to heavy Rains, the Flowers will be fairer, and continue much longer in Beauty.

The Plants which are thus treated are ſeldom fit for the Purpoſe the following Seaſon, therefore a Supply of young Plants ſhould be annually raiſed. The common Method of propagating them, is by dividing the Root; the beſt Time for which is in *September*, that the Offsets may get ſtrong Roots before Winter.

This Method of propagating by Offsets is the quickeſt, therefore generally practiſed, but the Plants which are raiſed from Seeds, are always ſtronger, and the Stalks will riſe higher, and produce a greater Number of Flowers, therefore I recommend it to the Practice of the Curious; but in order to obtain good Seeds, there ſhould be ſome ſtrong plants placed in a warm Situation, near a Pale, or Wall, in Autumn; and, if the following Winter ſhould prove ſevere, they ſhould be covered either with Hand Glaſſes, or Mats, to prevent their being injured by Froſt; in Summer when the Flowers are fully open, if the Seaſon ſhould prove very wet, the Flowers muſt be ſcreened from great Rains, otherwiſe there will be no good Seeds produced, and the not obſerving this, has occaſioned many to believe that the Plants do not bear Seeds in *England*, which is a great Miſtake, for I have raiſed great Numbers of the Plants from Seeds of my own ſaving; but I have always found that the Plants which have been long propagated by Offsets, do ſeldom produce Seeds, and many other Plants which are propagated by Slips, or Cuttings, in a few Years become barren.

When the Seeds are obtained, they muſt be ſown in Autumn in Pots, or Boxes, filled with light undunged Earth, and placed in the open Air till the Froſt, or hard Rains come on, when they ſhould be placed under a hot Bed Frame, where they may be ſheltered from both, but in mild Weather the Glaſſes ſhould be drawn off every Day, that they may enjoy the free Air; with this Management the Plants will come up early in the Spring, and then they muſt be removed out of the Frame, placing them firſt in a warm Situation, but when the Seaſon becomes warm, they ſhould be removed where they may have the Morning Sun only. During the following Summer they muſt be kept clean from Weeds, and in very dry Weather, now and then, refreſhed with Water, which muſt be given with great Caution, for the Roots are very ſubject to rot with Moiſture. In *September* the Leaves of the Plants will begin to decay, at which Time they ſhould be tranſplanted; therefore there muſt be one or two Beds prepared, in Proportion to the Number of Plants. Theſe Beds muſt be in a warm Situation, and the Earth light, ſandy, and without any Mixture of Dung, which laſt is an Enemy to this Plant. If the Situation of the Place is low, or the natural Soil moiſt, the Beds muſt be raiſed five or ſix Inches above the Surface of the Ground, and the natural Soil removed a Foot and a Half deep, putting Lime Rubbiſh, or Stones, eight or nine Inches thick in the Bottom of the Trench to drain off the Moiſture. When the Beds are prepared, the Plants muſt be taken out of the Pots, or Caſes, very carefully, ſo as not to break or bruiſe their Roots, for they are very tender, and, on being broken, the milky Juice will flow out plentifully, which will greatly weaken them. Theſe ſhould be planted at about four Inches Diſtance each Way, with the Head, or Crown of the Root, half an Inch below the Surface; if there happens a gentle Shower of Rain ſoon after they are planted, it will be of great Service to the Plants, but as the Seaſon ſometimes proves very dry at this Time of the Year, in that Caſe, it will be proper to give them a gentle Watering three or four Days after they are planted, and to cover the Beds with Mats every Day, to prevent the Sun from drying the Earth, but theſe muſt be taken off in the Evening, that the Dew may fall on the Ground. Towards the End of *October* the Beds ſhould be covered over with ſome old Tanners Bark to keep out the Froſt, and where there is not Conveniency of covering them with Frames, they ſhould be arched over with Hoops, that in ſevere Froſts they may be covered with Mats, for theſe Plants, when young, are often deſtroyed in Winter, where this Care is wanting. In Spring the Coverings muſt be removed, and the following Summer the Plants muſt be kept clean from Weeds; and, if the Seaſon ſhould prove very dry, they muſt now and then be refreſhed with Water. The following Autumn the Surface of the Ground ſhould be ſtired between the Plants, and ſome freſh Earth ſpread over the Beds, and in Winter covered as before. In theſe Beds the Plants may remain two Years, during which Time they muſt be treated in the Manner before directed, by which Time the Roots will be ſtrong enough to flower, ſo in *September* they ſhould be carefully taken up, and ſome of the moſt promiſing, planted in Pots; the others may be planted into warm Borders, or in a freſh Bed, at a greater Diſtance than before, to allow them Room to grow. Thoſe Plants which are potted ſhould be ſheltered in Winter from great Rains and hard Froſts, otherwiſe they will be in Danger of rotting, or at leaſt will be ſo weakened, as not to flower with any Strength the following Summer; and thoſe which are planted in the full Ground, ſhould have ſome old Tanners Bark laid round them, to prevent the Froſt from entering deep to the Roots; with this Management theſe Plants may be brought to the utmoſt Perfection, and a conſtant Succeſſion of good Roots raiſed, which will be much preferable to thoſe which are propagated by Offsets. I have been informed there is a double Flower of this Kind, but have never ſeen it. This Sort is by ſome called Steeple Bell Flower.

The 2d Sort grows naturally in the northern Parts of *Europe*, but has been long cultivated in the *Engliſh* Gardens; of this there are the ſingle, blue, and white Flower, which have been long here; and the double Flower of both Colours, which have not been more than twenty Years in *England*, but have been propagated in ſuch Plenty, as to have almoſt baniſhed thoſe with ſingle Flowers from the Gardens. Theſe are eaſily propagated by parting their Roots in Autumn, every Head which is then ſlipped off will take Root; they are extreme hardy, ſo will thrive in any Soil or Situation, therefore are very proper Furniture for the common Borders of the Flower Garden.

This hath a Root compoſed of many Fibres, and ſends up an angular, or channeled ſtiff Stalk, about two Feet and a Half high, which is garniſhed with oblong, oval, ſtiff Leaves near the Root, which come without Order, but thoſe on the Stalks are longer and narrower, having their Edges ſlightly indented, and are of a ſhining green. The Flowers are produced towards the upper Part of the Stalk, upon ſhort Foot Stalks. Theſe are ſhaped like thoſe of the former Sort, but are ſmaller, and more expanded. This Sort flowers in *June* and *July*, and in cool Seaſons there will be ſome great Part of *Auguſt*.

The 3d Sort is a biennial Plant, which periſhes ſoon after it hath ripened Seeds. It grows naturally in the Woods of *Italy* and *Auſtria*, but is cultivated in the *Engliſh* Gardens for the Beauty of its Flowers, of this Sort there are the following Varieties, the blue, the purple, the white, the ſtriped, and double flowering, but the two laſt are not very common in *England*.

This hath oblong, rough, hairy Leaves, which are ſerrated on their Edges, coming out without Order from the Root, from the Center of theſe a ſtiff, hairy, furrowed Stalk, ariſes about two Feet high, ſending out ſeveral lateral Branches, from the Bottom upward, garniſhed with long, narrow, hairy Leaves, ſawed on their Edges, and placed alternately; from the ſetting on of theſe Leaves, come out the Foot Stalks of the Flower; thoſe which are on the lower Part of the Stalk and Branches, being four or five Inches long, diminiſhing gradually in their Length upward, and thereby form a Sort of Pyramid. The Flowers of this Kind are very large, ſo make a fine Appearance; theſe come out the Beginning of *June*, and, if the Seaſon is not very hot, will continue a Month in Beauty. The Seeds ripen in *September*, and the Plants decay ſoon after.

It is propagated by Seeds, which muſt be ſown in Spring, on an open Bed of common Earth, and when the Plants are fit to remove, they ſhould be tranſplanted into the Flower Nurſery, in Beds ſix Inches aſunder, obſerving to water them frequently till they have taken new Root, after which they will require no other Culture, but to keep them clean from Weeds till the following Autumn, when they ſhould be tranſplanted into the Borders of the Flower Garden. As theſe Plants decay the ſecond Year, there ſhould be annually young ones raiſed to ſucceed them; but if you permit the Seeds to fall, the Plants will riſe in plenty and require no Care but to tranſplant them.

The 4th Sort hath a perennial Root, which ſends up ſeveral ſtiff hairy Stalks, having two Ribs, or Angles. Theſe put out a few ſhort Side Branches, garniſhed with oblong pointed hairy Leaves, deeply ſawed on their Edges. Toward the upper Part of the Stalks, the Flowers come out alternately, upon ſhort trifid Foot Stalks, having hairy Empalements. The Flowers are ſhaped as the former, but ſhorter, ſpread more at the Brim, and are pretty deeply cut into many acute Segments. This flowers in *June*, and the Seeds ripen in Autumn.

The Varieties of this are, the deep and pale blue; the white with ſingle Flowers, and the ſame Colours with double Flowers. The double Sorts are propagated by parting their Roots in Autumn, which ſhould be annually performed, otherwiſe the Flowers are apt to degenerate to ſingle; the Soil ſhould not be too light, or rich, in which they are planted, for in either of theſe they will degenerate; but in a ſtrong freſh Loam, their Flowers will be in the greateſt Perfection. The Plants are extreme hardy, ſo may be planted in any Situation; thoſe with ſingle Flowers do not merit a Place in Gardens.

The 5th Sort grows naturally in the nothern Parts of *England*; this hath a perennial Root, compoſed of many fleſhy Fibres, which abound with a milky Juice, from which ariſe ſeveral ſtrong, round, ſingle Stalks, which never put out Branches, but are garniſhed with oval Spear-ſhaped Leaves, ſlightly indented on their Edges, which are placed alternately. Toward the upper Part of the Stalk, the Flowers come out ſingly upon ſhort Foot Stalks; theſe ſpread open at the Brim, where they are deeply cut into five acute Segments; after the Flowers are paſt, the Empalement becomes a five cornered Seed Veſſel, which turns downward till the Seeds are ripe, when it riſes upward again.

The Varieties of this are the blue, purple, and white flowering. This Sort is eaſily propagated by Seeds, which if ſuffered to ſcatter, the Plants will come up in great Plenty the following Spring, when they may be tranſplanted into the Nurſery till Autumn, at which Time they ſhould be tranſplanted where they are deſigned to remain. As this Sort delights in Shade, the Plants may be placed under Trees, or in ſhady Borders where few better Things will thrive, and the Flowers afford an agreeable Variety. It flowers in *June* and *July*, and the Seeds ripen in Autumn.

The 6th Sort hath roundiſh fleſhy Roots, which are much cultivated in *France* for Sallets, and ſome Years paſt it was cultivated in the *Engliſh* Gardens, but is now generally neglected. It grows naturally in ſeveral Parts of *England*, but thoſe Roots never grow to half the Size of thoſe which are cultivated. This is propagated by Seeds, which ſhould be ſown in a ſhady Border the latter End of *May*, and when the Plants are about an Inch high, the Ground ſhould be hoed, as is practiſed for Onions, to cut up the Weeds, and thin the Plants to the Diſtance of 3 or 4 Inches; and when the Weeds come up again, they muſt be hoed over to deſtroy them; this, if well performed in dry Weather, will make the Ground clean for a conſiderable Time, ſo that being three Times repeated, it will keep the Plants clean till Winter, which is the Seaſon for eating the Roots, when they may be taken up for Uſe as they are wanted. Theſe will continue good till *April*, at which Time they ſend out their Stalks, when they will become hard and unfit for uſe, as do alſo thoſe Roots which have flowered, ſo that the young Roots only are fit for the Table; therefore when the Seeds are ſown too early, the Plants frequently run up to flower the ſame Year, which ſpoils their Roots.

This Sort ſends out upright Stalks about two Feet high, which are garniſhed with oblong Spear-ſhaped Leaves, placed alternately. Towards the upper Part of the Stalk the ſmall Bell Flowers are produced, ſtanding upright, cloſe to the Stalk; ſome of theſe Flowers are blue, and others are white; they come out in *June* and *July*, and the Seeds ripen in Autumn.

The 7th Sort grows naturally upon chalky Paſtures in many Parts of *England*, where the Stalks riſe near a Foot high, but in other Places it grows to double that Height, which has occaſioned their being taken for two diſtinct Plants. This hath a perennial Root, which ſends up ſeveral round hairy Stalks, which often riſe upward of two Feet high; the Bottom Leaves are broad, and ſtand upon long Foot Stalks; theſe are ſlightly ſawed on their Edges. Thoſe which are upon the Stalks are long, narrow, have no Foot Stalks, and are placed alternately at conſiderable Diſtances. From the Wings of the Leaves, towards the upper Part of the Stalk, come out long naked Foot Stalks, ſupporting two or three Bell-ſhaped Flowers, cloſely joined together in a Head, and the main Stalk is terminated by a large Cluſter of the ſame Flowers, which are ſucceeded by roundiſh Capſules filled with ſmall Seeds. This Plant is eaſily propagated by Seeds, or parting the Roots, and will thrive in any Soil or Situation. It flowers in *July*, and the Seeds ripen in Autumn.

The 8th Sort is an annual Plant which riſes with ſlender Stalks a Foot high, branching out on every Side, which are garniſhed with oblong Leaves, a little curled on their Edges; from the Wings of the Leaves come out the Flowers, ſitting cloſe to the Stalks, which are of a beautiful purple, inclining to a violet Colour, divided into five Segments, which reſemble ſo many Leaves, and in the Evening contract and fold into a pentagonal Figure, from whence it is by ſome titled *Viola Pentagonia*, or five cornered Violet. The Empalement which encompaſſes the Flower, is compoſed of five long, narrow, green Leaves, which ſpread open, and are much longer than the Petals of the Flower; theſe remain on the Top of the priſmatick Seed Veſſel, which is filled with ſmall angular Seeds. If this Plant is ſown in Autumn, it will grow much taller, and flower a Month earlier than when ſown in Spring. The autumnal Plants will flower in *May*, and the Spring Plants in *June* and *July*. There is a Variety of this with white Flowers, and another with pale purple.

The 9th Sort is the common *Venus* Looking Glaſs, which hath been long cultivated in the *Engliſh* Gardens. This ſeldom riſes more than ſix Inches high, with a Stalk branching from the Bottom upward, and garniſhed with oval Leaves, ſitting cloſe to the Stalks, from the Baſe of which the Branches are produced, which are terminated by Flowers, very like thoſe of the former Sort.

The 10th Sort grows naturally in *England*, in arable Land; this ſends out an upright Stalk, about 6 or 7 Inches high, and near the Root there are a few lateral Branches, which are weak, and ſpread out on every Side. Theſe are garniſhed with oval obtuſe Leaves, ſlightly indented on their Edges, and placed alternately. At the Extremity of the Branches the Flowers are produced in ſmall Cluſters, which are ſmall, but of the ſame Shape with the former, having a five leaved Empalement, much longer than the Petal, the Seed Veſſel is ſhaped like the two former, but ſmaller.

The 11th Sort grows naturally in the South of *France* and *Italy*. This is a low annual Plant, which ſeldom riſes ſix Inches high, but divides into many Branches, garniſhed with ſhort oval Leaves, ſitting cloſe to the Branches, and deeply indented on both Sides. The Flowers are produced at the Ends of the Branches, they are ſhaped like thoſe of the other three Sorts laſt mentioned, but ſmall, their Colour leſs beautiful, and the Leaves of the Empalement are broader.

The 12th Sort grows naturally in *Thrace*, but hath been long in the *Engliſh* Gardens. This is a low annual Plant, which riſes little more than ſix Inches high; the Stalks divide by Pairs, and frequently there ariſes a Branch from the Middle of the Diviſions; the lower Leaves are oblong and obtuſe, but thoſe toward the End of the Branches are much narrower, and pointed. The Flowers come out ſingle at the End of the Branches, having a long five-leaved Empalement, and are larger than thoſe of the three laſt Sorts, and of a fine blue Colour; the Seeds are like thoſe of the eighth Sort.

The 9th Sort is the old *Venus* Looking Glaſs, which was formerly cultivated in Gardens, but the 8th Sort has almoſt ſupplanted it, being a much taller Plant, and the Flowers are larger, but their Colour is leſs beautiful, however it produces a greater Quantity of Seeds, ſo is to be had in Plenty, and there are few Perſons, who are curious enough to diſtinguiſh them.

This was formerly ſown in Gardens for Edgings to Borders, as were ſeveral other low annual Flowers, for which Purpoſe they were very improper, becauſe the Deſign of theſe Edgings are to keep up the Earth of the Border, and prevent its waſhing down upon the Gravel in the Walks; but theſe Plants make very ſlender Roots, and often there are Gaps where the Seeds have not ſucceeded, whereby the Edgings are broken, which renders them unſightly; add to this the Shortneſs of their Duration, which is not more than ſix Weeks, from the Plants making a tolerable Verdure, to their Seeds being formed, when their Beauty decays, ſo that theſe Plants are by no Means adapted to this Purpoſe; therefore the Seeds ſhould be ſown in ſmall Patches, between taller flowering Plants where they are to remain, and the only Culture they require is to keep them clean from Weeds. If theſe, and the *Venus* Navelwort, Dwarf *Lychnis*, Candy Tuft, and other low annual Flowers, are properly mixed in the Borders of the Flower Garden, and ſown at two or three different Seaſons, to have a Succeſſion of them in flower, they will afford an agreeable Variety. If theſe Seeds are ſown in Autumn, the Plants will flower early in *May*, but thoſe ſown in Spring, will not flower till the Middle of *June*, and if a third ſowing is performed about the Middle of *May*, the Plants will flower in *Auguſt*, but from the laſt Sowing, good Seeds muſt not be expected.

The 13th Sort is an annual Plant, which in good Ground will riſe a Foot and a Half, but in poor Land, or where it grows wild among Corn, ſcarcely riſes ſix Inches. The Stalk is ſingle, rarely putting out any Branches, unleſs near the Root, from whence there are ſometimes one or two ſhort lateral Branches produced. The Leaves are roundiſh, and embrace the Stalk at their Baſe, their Edges are ſharply ſawed, and from their Baſe comes out a cloſe Tuft of Flowers, ſurrounded by the Leaf, as in an Empalement. The Flowers are five cornered, ſhaped like thoſe of the *Venus* Looking Glaſs, but much ſmaller; theſe are produced the whole Length of the Stalk. The Seeds are incloſed in ſhort Capſules, ſhaped like thoſe of the former Sorts. It grows in *Italy*, and alſo in *Virginia*. If the Seeds of this Sort are permitted to ſcatter, the Plants will come up without Care, or the Seeds may be ſown in Spring, in the ſame Manner as thoſe of the laſt Sorts, and treated the ſame Way.

The 14th Sort is a Native of *America*, but has been long cultivated in the Gardens of the Curious, both in *England* and *Holland*. This hath many rigid oblong Leaves coming out from the Root on every Side, which form a Sort of Head like thoſe of Houſe-leek, and are crenated, having a ſtrong Rib running on their Border longitudinally. From the Center of the Plant proceeds the Stalk, which riſes about a Foot high, and is thinly garniſhed with very narrow ſtiff Leaves, of a ſhining green. From the Wings of the Leaves, come out the Foot Stalks of the Flower, which are from two to four Inches long, each being terminated by one ſpreading Bell-ſhaped Flower, whoſe Empalement is ſhort, and cut into five acute Segments. The Style of this is longer than the Petal, and is crowned by a bifid Stigma. There is a white and a blue Flower of this Sort, but in *Holland* they have it with a double Flower. This doth not produce Seeds in *England*, ſo is only propagated by Offſets; theſe may be taken off from the old Plants in *Auguſt*; that they may get good Root before the cold Weather begins; they muſt be planted in ſmall Pots, filled with freſh, light, loamy Earth, and placed in the Shade until they have taken Root, then they may be placed with other hardy exoticks, and in Autumn removed into Shelter, for they will not live abroad. It flowers in *July* and *Auguſt*.

The 15th Sort is a Native of the *Canary Iſlands*, from whence it was introduced to the Gardens in *Europe*, where it hath been many Years cultivated, and of late

Years great Numbers of the Plants have been raiſed from Seeds, which were brought from thence, but the Flowers of theſe new raiſed Plants are not ſo well coloured as thoſe of the old ones.

This hath a thick fleſhy Root, of an irregular Form, ſometimes running downward like a Parſnep, at other Times dividing into ſeveral Knobs near the Top, and when any Part of the Root is broken, there iſſues out a milky Juice at the Wound. There are many ſtrong fleſhy Fibres ſent out, which ſtrike deep into the Ground, and from theſe a numerous Quantity of ſmall ones. From the Head, or Crown of the Root, ariſes one, two, three, or more Stalks, in Proportion to the Size of the Root; but that in the Center is generally larger, and riſes higher than the others. Theſe Stalks are very tender, round, and of a pale green; their Joints are far diſtant from each other, and when the Roots are ſtrong, the Stalks will riſe ten Feet high, ſending out ſeveral ſmaller Side Branches. At each Joint they are garniſhed with two, three, or four Spear-ſhaped Leaves, with a ſharp pointed Beard on each Side. Theſe are of a Sea-green, and, when they firſt come out, are covered ſlightly with an Aſh-coloured Pounce. From the Joints of the Stalk the Flowers are produced, which are of the perfect Bell-ſhape, and hang downward; they are of a Flame Colour, marked with ſtripes of a browniſh red; the Flower is divided into five Parts, at the Bottom of each is ſituated a Nectarium, covered with a white tranſparent Skin, much reſembling thoſe of the Crown Imperial, but are ſmaller; upon each of theſe is ſituated a Stamen, which riſes almoſt the Length of the Petal, and is terminated by oblong Summits. In the Center of the Flower is ſituated the Style, which is longer than the Stamina, and is crowned by a trifid Stigma, which is reflexed. The Flowers begin to open in the Beginning of *October*, and there is often a Succeſſion of them till *March*. The Stalks decay to the Root in *June*, and new ones ſpring up in *Auguſt*.

It is propagated by parting the Roots, which muſt be done with Caution, for if they are broken or wounded, the milky Juice will flow out plentifully, ſo that if theſe are planted before the Wounds are ſkined over, it occaſions their rotting; therefore when any of them are broken, they ſhould be laid in the Green-houſe a few Days to heal. Theſe Roots muſt not be too often parted, if they are expected to flower well; for by frequent parting, the Roots are weakened. The beſt Time for tranſplanting and parting their Roots, is in *July*, ſoon after the Stalks are decayed. The Earth in which theſe ſhould be planted, muſt not be rich, for that will cauſe them to be luxuriant in Branches, and but thinly garniſhed with Flowers. The Soil in which they have ſucceeded beſt, is a light ſandy Loam, mixed with a fourth Part of ſcreened Lime Rubbiſh; when the Roots are firſt planted, the Pots ſhould be placed in the Shade; and, unleſs the Seaſon is very dry, ſhould not be watered, for during the Time they are inactive, Wet is very injurious to them. About the Middle of *Auguſt* the Roots will begin to put out Fibres, at which Time, if the Pots are placed under a hot Bed Frame, and as the Nights grows cool, covered with the Glaſſes, but opened every Day to enjoy the free Air, it will greatly forward them for flowering, and increaſe their Strength; when the Stalks appear, the Plants muſt be now and then refreſhed with Water, but not too often, nor in great Quantity. The Plants thus managed, by the Middle of *September*, will have grown ſo tall, as not to be kept longer under the Frame, ſo they ſhould be removed into a dry airy Glaſs Caſe, where they may enjoy the free Air in mild Weather, but ſcreened from Cold. During the Winter Seaſon, they muſt be frequently refreſhed with Water, and guarded from Froſt; and in Spring, when the Stalks begin to decay, the Pots ſhould be ſet abroad in the Shade, and not watered.

CAMPHORA. *See* Laurus.

CAMPION. *See* Lychnis.

CANDLE-BERRY-TREE. *See* Myrica.

CANDY-TUFT. *See* Iberis.

CANNA. *Lin. Gen. Plant.* 1. *Cannacorus. Tourn. Inſt. R. H.* 367. *Tab.* 192. *Indian* flowering Reed, and by ſome, *Indian* Cane. In *French Baliſier.*

The *Characters* are,

The Flower hath a three leaved Empalement, which is permanent, erect, and coloured. It hath one Petal, divided into ſix Parts: The three upper Segments are erect, and broader than the lower, which are longer, two of which are erect, and the other turns back and is twiſted. It hath one Spear-ſhaped Stamina riſing as high as the Petal, having the Appearance of a Segment, which hath a ſlender Summit ſitting upon its Border. Below the Empalement is ſituated a roundiſh, rough Germen, ſupporting a flat Style, with a ſlender Stigma faſtened to its Border. The Germen becomes an oblong, roundiſh, membranaceous Capſule, having three longitudinal Furrows, crowned by the Empalement, which hath three Cells filled with round ſmooth Seeds.

The *Species* are,

1. Canna *foliis ovatis utrinque acuminatis nervoſis. Prod. Leyd. Canna* with oval nervous Leaves pointed at both Ends. This is the *Cannacorus latifolius vulgaris. Tourn.* Common broad leaved flowering Cane.

2. Canna *foliis oblongo-ovatis, acuminatis, ſegmentis florum anguſtioribus. Canna* with oblong, oval, pointed Leaves, and the Segments of the Flower narrow. *Cannacorus ampliſſimo folio flore rutilo. Tourn. Inſt. Indian* flowering Cane with a large Leaf, and rediſh Flower.

3. Canna *foliis ovatis obtuſis nervoſis, ſpicis florum longioribus. Canna* with oval obtuſe nervous Leaves, and longer Spikes of Flowers. This is the *Cannacorus flore Coccineo ſplendente. Tourn. Inſt.* 367. *Indian* flowering Cane, with a ſhining ſcarlet Flower.

4. Canna *foliis ovatis petiolatis nervoſis ſpatha floribus longiore. Canna* with oval, obtuſe, nervous Leaves, having Foot Stalks, and a longer Hood to the Flower. This is the *Cannacorus flore luteo punctato. Tourn. Inſt. R. H.* 367. *Indian* Reed with a yellow ſpotted Flower.

5. Canna *foliis lanceolatis petiolatis enervibus. Prod. Leyd.* 11. *Canna* with Spear-ſhaped, ſmooth Leaves having Foot Stalks. This is the *Cannacorus glaucophyllus, ampliore flore, Iridis paluſtris facie. Hort. Elth.* 69. *Indian* Cane with glaucous Leaves, a very large Flower, and the Appearance of the Marſh *Iris.*

The 1ſt Sort grows naturally in both *Indies*: The Inhabitants of the *Britiſh* Iſlands, call it *Indian* Shot, from the Roundneſs and Hardneſs of the Seeds.

This Plant hath a thick, fleſhy, tuberous Root, which divides into many irregular Knobs, ſpreading wide near the Surface of the Ground, and ſends out many large oval Leaves without any Order; theſe, at their firſt Appearance, are twiſted like a Horn, but afterwards expand and are near a Foot long, and five Inches broad in the Middle, leſſening gradually to both Ends, and terminated in a Point. They have many large tranſverſe Veins running from the Midrib to the Sides, which are prominent on their under Side; and between each of theſe, run two ſmaller, parallel, pointed Veins, which are peculiar to this Species. The Stalks are herbaceous, riſing four Feet high, and are encompaſſed by the broad leafy Foot Stalks of the Leaves; theſe are compreſſed on two Sides; at the upper Part of the Stalk, the Flowers are produced in looſe Spikes, each being at firſt covered by a leafy Hood, which afterward ſtands below the Flower, and turns to a brown Colour. Each Flower hath one Petal, which is cut almoſt to the Bottom into ſix ſlender Segments, the three upper being broadeſt; theſe are of a bright Scarlet, but the under have a Mixture of a paler Colour. The Flower is encompaſſed by a three leaved Empalement, which ſits upon a ſmall, roundiſh, rough Germen, which, after the Flower is fallen, ſwells to a large Fruit or Capſule oblong and rough, having three longitudinal Furrows, and is crowned by the three leaved Empalement of the Flower which remains. When the Fruit is ripe, the Capſule opens lengthways into three Cells, which are filled with round, hard, black, ſhining Seeds. The principal Seaſon of theſe Plants flowering, is in *June* and *July*, but when they are placed in a proper Temperature of Heat, they always flower again in Winter and Spring.

As this is a Native of the warmeſt Parts of *America*, it requires a moderate Stove in Winter, otherwiſe the Roots will decay. I have frequently tried to keep it through the Winter in a Green-houſe, but could not ſucceed; for although ſome have eſcaped, yet they were ſo much weakened by the Cold, as not to recover Strength the following Summer, to flower in any tolerable Degree of Perfection; ſo that I have ſince conſtantly kept them in Winter in a moderate Stove, where they always flower in that Seaſon, at which Time they make a fine Appearance; and in Summer, place them abroad in a ſheltered Situation with other tender exotics, where they flower again, and produce ripe Seeds annually.

The 2d Sort grows naturally in *Carolina*, and ſome of the other northern Provinces of *America*. The Leaves of this are longer than thoſe of the former, and terminate in ſharper Points. The Stalks grow taller, and the Segments of the Flower are much narrower; the Colour is a pale red, ſo it makes no great Appearance. The Seeds are like thoſe of the former. If the Roots of this are planted in warm Borders, and a dry Soil; they will live through the Winter in the open Air. I have Plants of this Sort in the *Chelſea* Garden, which have ſurvived twelve Winters in a South-Weſt Border, without Cover, and flower well every Year.

The 3d Sort hath larger Leaves than either of the former, and the Stalks riſe much taller. I have received the Seeds from *America*, by the Title of *Wild Plaintain*, and alſo from the *Brazils*. The Flower Stalks riſe more than ſix Feet high. The Leaves are very large, thoſe near the Root have long Foot Stalks. The Flowers are produced in larger Spikes than thoſe of the former Sorts, and of a much brighter Scarlet. The Seed Veſſels are longer, and the Seeds larger; theſe Differences are permanent from Seeds, ſo that I make no doubt of its being a diſtinct Species.

The 4th Sort is leſs common in *America*. I received the Seeds of this from *India*, but have had two Varieties ariſe from the Seeds, one with a plain yellow, and the other a ſpotted Flower, which I find are apt to change from one to the other, when propagated by Seeds. This hath ſhorter and rounder Leaves than either of the former Sorts. The Stalks ſeldom riſe higher than three Feet, and the Spikes of Flowers are like thoſe of the 1ſt, excepting the Colour of the Flowers.

The Seeds of the 5th Sort I received from *Carthagena* in *New Spain*, in 1733, which produced very ſtrong Plants the firſt Year, ſome of which flowered the ſame Autumn. The Roots are much larger than either of the former Sorts, and ſtrike down ſtrong fleſhy Fibres deep in the Ground. The Stalks riſe ſeven or eight Feet high. The Leaves are near two Feet long, narrow, ſmooth, and of a Sea-green Colour. The Flowers are produced in ſhort, thick Spikes at the Extremity; they are large, and of a pale yellow Colour; the Segments of the Petal are broad, but their Shape like thoſe of the other Sorts. The Seed Veſſels are larger, and much longer than thoſe of the other Sorts, but contain fewer Seeds, which are very large. Young Plants raiſed from Seeds of this Sort, do more certainly flower than old Roots, or Offſets taken from them; for the Roots ſend out many Offſets, which will ſpread to a conſiderable Diſtance where they have Room, but ſeldom produce Flowers, ſo that it is the beſt Way to raiſe a Succeſſion of Plants from Seeds, and throw out the old ones when their Seeds are ripe.

All the Sorts are propagated by Seeds, which ſhould be ſown on a hot Bed in the Spring, and when the Plants are fit to remove, they ſhould be tranſplanted into ſeparate ſmall Pots, filled with rich Kitchen Garden Earth, and plunged into a moderate hot Bed of Tanners Bark, obſerving to ſhade them till they have taken Root; after which, they ſhould have a large Share of free Air admitted to them every Day, in warm Weather, and be frequently refreſhed with Water. As theſe Plants will make great Progreſs in their Growth, they muſt be ſhifted into larger Pots filled with the ſame Sort of Earth, and Part of them plunged into the hot Bed again, and the others may be placed abroad in *June*, with other exotick Plants, in a warm Situation. Thoſe which are placed in the hot Bed, will be ſtrong enough to flower well in the Stove, the following Winter; but thoſe in the open Air, will not flower before the following Summer: Theſe may remain abroad till the Beginning of *October*, when they muſt be removed into the Stove, and treated in the ſame Manner as the old Plants; and in *May*, if a gentle hot Bed is made, and covered a Foot thick with rich Earth, and the Plants turned out of the Pots, planting them with their Balls of Earth upon the hot Bed, covering each with a Bell Glaſs, which may be raiſed on one Side every Day, to admit Air to the Plants; and as theſe advance, they muſt be gradually inured to bear the open Air. With this Management, the Plants will grow much taller, and flower ſtronger than thoſe which are kept in Pots, and from theſe, good Seeds may be expected in Autumn.

The 2d Sort which is much hardier than either of the other, ſhould have a different Treatment. The young Plant of this, muſt be earlier inured to the open Air, where they may remain till the Froſt begins, then they muſt be placed in the Green-houſe, and ſhould have but little wet in Winter; and the Beginning of *May*, theſe ſhould be turned out of the Pots, and planted in a warm South Border, in a dry Soil, where they will thrive and produce Flowers annually; but as there is little Beauty in this Sort, ſo a few Plants for Variety, will be ſufficient. There is a Variety of this with variegated Leaves, which is preſerved in ſome Gardens, and is propagated by parting the Roots; but this hath little Beauty, ſo is ſcarce worth cultivating.

CANNABINA. *See* Datiſca.

CANNABIS *Lin. Gen. Plant.* 988. Hemp.

The *Characters* are,

It is male and female in different Plants. The male Flowers have a five leaved Empalement which is concave, but have no Petals: they have five ſhort hairy Stamina, terminated by oblong, ſquare Summits. The female have permanent Empalements of one Leaf, oblong and pointed. They have no Petals but a ſmall Germen ſupporting two long Styles, crowned by acute Stigma; the ſmall Germen becomes a globular depreſſed Seed, incloſed in the Empalement.

We have but one Species of this Plant, *viz.*

CANNABIS. *Lin. Sp. Plant.* 1027. Hemp. This is the *Cannabis ſativa. C. B. P.* 320. Manured Hemp.

This Plant is propagated in the rich fenny Parts of *Lincolnſhire*, in great Quantities, for its Bark, which is uſeful for Cordage, Cloth, &c. and the Seeds afford an Oil, which is uſed in Medicine.

Hemp is always ſown on a deep moiſt rich Soil, ſuch as is found in *Holland*, in *Lincolnſhire*, and the Fens in the Iſle of *Ely*, where it is cultivated to great Advantage, as it might in many other Parts of *England*, where there is the like Soil; but it will not thrive on Clay, or ſtiff cold Land: It will greatly impoveriſh the Land, ſo that this Crop muſt not be repeated on the ſame Ground.

The Land on which Hemp is deſigned to be ſown, ſhould be well ploughed, and made very fine by Harrowing; about the Middle of *April* is a good Seaſon for ſowing the Seed: Three Buſhels is the uſual Allowance for an Acre, but two is fully ſufficient: In the Choice of the Seed, the heavieſt and brighteſt-coloured ſhould be preferred, and Care ſhould be had to the Kernel of the Seed, ſo that ſome of them ſhould be cracked to ſee if they have the Germ or future Plant perfect; for in ſome Places the male Plants are drawn out too ſoon from the female; *i. e.* before they have impregnated the female Plants with the *Farina*; in which Caſe, though the Seeds produced by theſe female Plants may ſeem fair to the Eye, yet they will not grow, as is well known to the Inhabitants of *Bickar*, *Swineſhead*, and *Dunnington*, three Pariſhes in the Fens of *Lincolnſhire*, where Hemp is cultivated in great Abundance, who have dearly bought their Experience.

When the Plants are come up, they ſhould be hoed out as is practiſed for Turneps, leaving the Plants a Foot or 16 Inches apart; obſerve alſo to cut down all the Weeds, which if done in dry Weather, will deſtroy them. This Crop will require a ſecond Hoeing about a Month or ſix Weeks after the firſt, in order to deſtroy the Weeds: If this be well performed, it will require no farther Care; for the Hemp will ſoon after cover the Ground, and prevent the Growth of Weeds.

The firſt Seaſon for pulling the Hemp is about the Middle of *Auguſt*, when they begin to pull what they call the Fimble Hemp, which is the male Plants; but it would be much better to defer this a Fortnight or three Weeks longer, until theſe male Plants have fully ſhed their Duſt, without which, the Seeds will prove abortive, produce nothing if ſown the next Year, nor will thoſe concerned in the Oil Mills give any Thing for them, there being only empty Huſks, without any Kernels to produce the Oil. Theſe male Plants decay ſoon after they have ſhed their Farina.

The 2d Pulling is a little after *Michaelmas*, when the Seeds are ripe: This is uſually called Karle Hemp, it is the female Plants, which were left at the Time when the male were pulled. This Karle Hemp is bound in Bundles of a Yard Compaſs, according to Statute Meaſure, which are laid in the Sun for a few Days to dry; and then it is ſtacked up, or houſed to keep it dry, till the Seed can be threſhed out. An Acre of Hemp on a rich Soil, will produce near three Quarters of Seed, which, together with the unwrought Hemp, is worth from ſix to eight Pounds.

Of late the Inhabitants of the *Britiſh* Colonies in *North America*, have cultivated this uſeful Plant, and a Bounty was granted by Parliament for Hemp imported from thence; but whether the Inhabitants of thoſe Colonies grew tired of cultivating it, or the Bounty was not regularly paid, I cannot ſay; whatever has been the Cauſe, the Quantity imported, has by no means anſwered the Expectation of the Public, which is greatly to be lamented; becauſe, as this Commodity is ſo eſſential to the Marine, the being furniſhed with it from our own Plantations, will not only ſave the ready Money paid for it, but ſecure to the Country an ample Supply at all Times, without being obliged to our Neighbours for it.

CANNACORUS. *See* Canna.

CAPERS. *See* Capparis.

CAPILLARY Plants, are ſuch Plants as have no main Stem, but their Leaves ariſe from the Root upon Pedicles, and produce their Seeds on the Back of their Leaves, as the Fern, Maiden Hair, &c.

CAPITULUM; *i. e.* a little Head; the Head or Top of any flowering Plant.

CAPNOIDES. *See* Fumaria.

CAPNORCHIS. *See* Fumaria.

CAPPARIS *Lin. Gen. Plant.* 567. *Tourn. Inſt. R. H.* 261. Caper, in *French Caprier.* The Caper Buſh.

The *Characters* are,

The Empalement is compoſed of three oval concave Leaves; the Flower hath four roundiſh Petals, indented at the Top, and ſpread open; it hath a great Number of ſlender Stamina, as long as the Petals, terminated by ſingle Summits; in the midſt of theſe ariſe a ſingle Style, longer than the Stamina, with an oval Germen crowned by a ſhort obtuſe Stigma. The Germen becomes a fleſhy turbinated Capſule, with one Cell filled with Kidney-ſhaped Seeds.

The *Species* are,

1. CAPPARIS *ſpinoſa, fructu minore, folio rotundo. C. B.*

C. B. P. 480. Prickly Caper with a ſmaller Fruit, and a round Leaf.

2. Capparis *inermis foliis ovatis perennantibus.* Smooth Caper with oval Leaves, which remain all the Year. This is the *Capparis non ſpinoſa, fructu majore. C. B. P.* 480. Smooth Caper with a larger Fruit.

3. Capparis *inermis foliis ovato-oblongis determinate confertis perennantibus. Hort. Cliff.* 204. Smooth Caper with oval oblong Leaves, growing in Cluſters, which continue through the Year. This is the *Capparis arboreſcens Indica Baducca dicta. Raii Hiſt.* 1630. *Indian* Tree Caper, called *Baducca.*

4. Capparis *foliis lanceolato-ovatis perennantibus caule arboreſcenti.* Caper with oval Spear-ſhaped Leaves, which continue all the Year, and a Tree-like Stalk.

5. Capparis *foliis lanceolatis venoſis perennantibus, floribus racemoſis.* Caper with Spear-ſhaped veined perennial Leaves and Flowers growing in Bunches. This is the *Capparis arboreſcens Lauri foliis fructu longiſſimo. Plum. Cat.* 7. Tree Caper with Bay Leaves, and the longeſt Fruit.

6. Capparis *foliis ovatis oppoſitis perennantibus floribus racemoſis.* Caper with oval Leaves, placed oppoſite, which are perennial, and Flowers growing in Bunches.

7. Capparis *foliis oblongo-ovatis alternis ſeſſilibus perennantibus, floribus ſolitariis axillaribus.* Caper with oblong oval Leaves, placed alternate cloſe to the Stalks, and Flowers growing ſingly from the Sides of the Branches.

8. Capparis *foliis lanceolatis acutis confertis perennantibus, caule fruticoſo.* Caper with pointed Spear-ſhaped perennial Leaves, growing in Cluſters, and a ſhrubby Stalk.

9. Capparis *foliis lanceolatis alternis, petiolis longiſſimis floribus confertis.* Caper with Spear-ſhaped Leaves placed alternate, on very long Foot Stalks, and Flowers growing in Cluſters. This is the *Capparis alia arboreſcens Lauri foliis fructu oblongo ovato. Plum. Cat.* 7. Tree Caper with Bay Leaves, and oblong oval Fruit.

10. Capparis *foliis lanceolatis nervoſis perennantibus, pedunculis trifloris.* Caper with nervous Spear-ſhaped perennial Leaves, and three Flowers upon each Foot Stalk.

The 1ſt is the common Caper, whoſe full grown Flower Bud is pickled, and imported annually from *Italy,* and the *Mediterranean.* This is a low Shurb, which grows out of the Joints of old Walls, the Fiſſures of Rocks, and among Rubbiſh, in moſt of the warm Parts of *Europe:* This hath woody Stalks covered with a white Bark, which ſends out many lateral ſlender Branches; under each of theſe are placed two ſhort crooked Spines, between which and the Branches come out the Foot Stalk of the Leaves, which are ſingle, ſhort, and ſuſtain a round ſmooth entire Leaf; at the intermediate Joints between the Branches, come out the Flowers upon long Foot Stalks; before theſe expand, the Bud, with the Empalement, is gathered for pickling; but thoſe which are left, expand in Form of a ſingle Roſe, having five large white Petals, which are roundiſh and concave; in the Middle is placed a great Number of long Stamina, ſurrounding a Style, which riſes above them, and is crowned with an oval Germen, which becomes a Capſule, filled with Kidney-ſhaped Seeds.

This Sort is cultivated on old Walls about *Toulon,* and in *Italy.* Mr. *Ray* obſerved it growing naturally on the Walls and Ruins at *Rome, Sienna,* and *Florence.*

The 2d Sort hath weaker Stalks than the 1ſt, which are ſmooth, having no Spines on them; the Leaves are oval, ſmooth, and in their natural Place of Growth, continue through the Year; but in *England* the young Shoots are generally killed in Winter. From the Foot Stalk of the Leaves come out the Flowers, which ſtand upon very long Foot Stalks, and are produced ſingly; theſe Flowers are like thoſe of the former, but are much larger; as are alſo the Buds; but theſe are not eſteemed ſo good as thoſe of the firſt for Pickling.

Theſe Plants are with Difficulty preſerved in *England,* for they delight to grow in Creviſes of Rocks, and the Joints of old Walls or Ruins, and always thrive beſt in an horizontal Poſition; when planted either in Pots, or the full Ground, they rarely thrive, though they may be kept alive for ſome Years. They are propagated by Seeds in the warm Parts of *Europe,* but it is very difficult to get them to grow in *England.* I have ſeveral times ſowed theſe Seeds without Succeſs, as have many other Perſons; I never raiſed any of the Plants from Seeds, but in the Year 1738, when I had three Plants come up in an old Wall, which being young and tender, were deſtroyed in 1740. There is an old Plant growing out of a Wall in the Garden at *Camden Houſe* near *Kenſington,* which has reſiſted the Cold for many Years, and annually produces many Flowers, but the young Shoots are killed to the Stump every Winter.

The Roots are annually brought from *Italy,* by thoſe who import Orange Trees, ſome of which have been planted in Walls, where they have lived a few Years.

The 3d Sort I received from *Carthagena* in *New Spain,* near which Place it grows naturally. This riſes with a woody Stem, to the Height of 12 or 14 Feet, ſending out many lateral Branches, covered with a ruſſet Bark, and garniſhed with oblong oval Leaves, ſtanding upon long Foot Stalks; the Flowers are produced, from the Side of the Branches, ſingle, ſtanding upon long Foot Stalks, which are like thoſe of the laſt Sort.

The 4th Sort was ſent me from *Carthagena.* This grows with a ſtrong upright Trunk, near 20 Feet high, ſending out many lateral Branches, which are covered with a very white Bark, and are cloſely garniſhed with large oblong ſtiff Leaves, of a thicker Conſiſtence than thoſe of the common Laurel, of a ſplendid green, having ſeveral tranſverſe Nerves from the Midrib to the Border, which are prominent on their under Side; the Flowers come out from the Side of the Branches, which are large, and the Summits of the Stamina are purple.

The 5th Sort was ſent me from the ſame Country. This riſes with a Trunk about 20 Feet high, ſending out many long ſlender Branches, which are covered with a brown Bark, and garniſhed with Leaves like thoſe of the Bay Tree, but longer, and deeply ribbed on their under Side, ſtanding upon pretty long Foot Stalks, and come out in Cluſters, without any Order. The Flowers are produced upon long Foot Stalks, which terminate the Branches, each ſuſtaining two or three Flowers, which are large, white, and are ſucceeded by Pods two or three Inches long, and the Thickneſs of a Man's little Finger, which are filled with large Kidney-ſhaped Seeds: Theſe Pods have a thick fleſhy Cover.

The 6th Sort was ſent me from *Tolu* in *America.* This riſes with a ſhrubby Stalk, to the Height of eight or ten

Feet, ſending out many ligneous Branches covered with a reddiſh brown Bark; theſe are garniſhed with oval ſtiff Leaves placed oppoſite, on ſhort red Foot Stalks; from the Wings of the Leaves ariſe the Foot Stalks of the Flowers, which are long, ſlender, and branch out into many ſmaller, each of which ſuſtains a ſmall white Flower, which is ſucceeded by an oval Pod containing many ſmall Kidney-ſhaped Seeds.

The 7th Sort riſes with a ſhrubby Stem, to the Height of 12 or 14 Feet, ſending out many ſtrong lateral Branches, covered with a dark brown Bark, and garniſhed with oblong oval Leaves, placed alternately, which have very ſhort Foot Stalks; the Leaves are of a thicker Conſiſtence than thoſe of the Bay Tree; at the Foot Stalk of each Leaf comes out a ſingle Flower, almoſt the whole Length of the Branches, which are ſmall, and ſtand upon ſhort Foot Stalks; the Summits of theſe Flowers are of a purpliſh Colour, but the Stamina are white.

The 8th Sort riſes with a ſhrubby Stalk, to the Height of 10 or 12 Feet, ſending out ſlender horizontal Branches on every Side, which are covered with a reddiſh Bark; the Joints of theſe Branches are far diſtant; at each of theſe come out ſeveral Leaves in Cluſters, without Order, ſtanding upon pretty long Foot Stalks; they are ſix Inches long, and three broad in the Middle, and as thick as thoſe of the Laurel, of a ſhining green, ſmooth on their upper Side, but have many tranſverſe Ribs on their under Side, which are prominent. I received this and the 7th Sort from *Tolu*.

The 9th Sort I received from *Carthagena*, where it grows naturally; this hath many ſhrubby Stalks ariſing from the Root without Order, which ſend out many lateral Branches on every Side, and are cloſely garniſhed with large Spear-ſhaped Leaves, ſtanding upon very long Foot Stalks; the Flowers are produced in Cluſters at the End of the Branches, upon very ſhort Foot Stalks, they are ſmall, white, with yellowiſh Stamina, and a very long Style, which is incurved, terminated by an oblong Germen, which afterwards becomes an oblong Fruit.

The 10th Sort hath ſlender ſhrubby Stalks, which riſe 7 or 8 Feet high, ſending out many ligneous Branches, garniſhed with very long nervous Spear-ſhaped Leaves. The Flowers come out at the End of the Branches, three ſtanding upon each Foot Stalk; theſe are ſmall, white, and are ſucceeded by oval Fruit.

Theſe laſt 8 Sorts are Natives of warm Countries, ſo will not live through the Winter in *England*, without the Aſſiſtance of a Stove. They are propagated by Seeds, which muſt be procured from the Countries where they grow naturally, for they do not produce any in *England*; they muſt be ſown in ſmall Pots, filled with light ſandy Earth, and plunged into a hot Bed of Tanners Bark; they muſt be now and then refreſhed with Water, but by no Means give it in too great Plenty: In about two Months the Plants will appear, provided the Seeds are good, when they muſt have but little Wet, and a good Share of Air in warm Weather; when they are large enough to remove, they muſt be each tranſplanted into a ſmall Pot, filled with the ſame Earth, and plunged into the hot Bed again, obſerving to ſhade them until they have taken freſh Root, after which they ſhould have freſh Air admitted to them every Day, in Proportion to the Warmth of the Seaſon. In Autumn they muſt be removed into the Stove, and plunged in the Bark Bed, where they ſhould conſtantly remain, and require the ſame Treatment as other tender exotics, with this Difference only, that they require but little Water, eſpecially during the Winter, for their Roots are very ſubject to rot with Wet.

If the Seeds are brought over in their Capſules, they will keep much better than without them; theſe ſhould be ſecured from Inſects, by wrapping them in Tobacco Leaves which are well dried; without this Precaution, the Seeds will be deſtroyed before they arrive.

BEAN CAPER. *See* Zygophyllum.

CAPRARIA. *Lin. Gen. Plant.* 686. Sweet Weed.

The *Characters* are,

It hath a permanent Empalement of one Leaf, cut into five oblong narrow Segments, which are erect and ſtand aſunder; the Flower is Bell-ſhaped, of one Leaf, divided at the Top into five equal Parts, the two upper ſtanding erect; it hath four Stamina, inſerted in the Baſe of the Petal, and but little more than half ſo long, two of the under being ſhorter than the other, and terminated by Heart-ſhaped Summits; it hath a conical Germen ſupporting a ſlender Style, longer than the Stamina, crowned by a bivalve Heart-ſhaped Stigma. The Germen afterward becomes an oblong conical Capſule, compreſſed at the Point, having two Cells, divided by a Partition filled with roundiſh Seeds.

We have but one *Species* of this Genus, *viz.*

CAPRARIA *foliis alternis corollis quinquefidis. Hort. Cliff.* 320. Capraria with alternate Leaves, and the Petal divided into five Parts. This is the *Capraria Curaſſavica. Par. Bat.* 110. *Capraria* of *Curaſſo*.

This Plant grows naturally in the warm Parts of *America*, where it is often a troubleſome Weed in the Plantations; it riſes with an angular green Stalk, about a Foot and a Half high, ſending out Branches at every Joint, which ſometimes come out by Pairs oppoſite, but generally there are three at a Joint ſtanding round the Stalk; the Leaves are alſo placed round the Branches by threes; theſe ſtand upon ſhort Foot Stalks, are oval, hairy, and a little indented on their Edges. The Flowers are produced at the Wings of the Leaves, coming out on each Side the Stalk, each Foot Stalk ſuſtaining three white Flowers; and ſucceeded by conical Capſules, compreſſed at the Top, opening in two Parts, and filled with ſmall Seeds. This Plant is preſerved in Botanick Gardens for Variety; but as it hath no great Beauty, is ſeldom admitted into other Gardens.

It is propagated by Seeds, ſown upon a hot Bed in Spring, and the Plants muſt be brought forward by planting them upon a ſecond hot Bed; about the latter End of *June* they may be tranſplanted into Pots of rich Earth, or a warm Border, and may then be expoſed to the open Air, where they will perfect Seeds in Autumn.

CAPREOLATE Plants; ſuch as twiſt and climb upon others, by means of Tendrils.

CAPRIFOLIUM. *See* Periclymenum.

CAPSICUM. *Lin. Gen. Plant.* 225. *Tourn. Inſt. R. H.* 152. *Tab.* 66. *Guinea* Pepper; in *French*, *Poivre d' Inde, ou de Guinée.*

The *Characters* are,

The Flower hath a permanent Empalement of one Leaf, divided into five Parts, and erect. It hath but one Petal, which is Wheel-ſhaped, having a very ſhort Tube, ſpread *open above, and divided into five Parts; it hath five ſmall Stamina, terminated by oblong Summits, which are connected. It hath an oval Germen, ſupporting a ſlender Style, longer than the Stamina, and crowned by an obtuſe Stigma. The Germen becomes a ſoft Fruit, or Capſule, of an indeterminate Figure, having two or more Cells divided by Partitions, to which adhere many compreſſed Kidney-ſhaped Seeds.*

The *Species* are,

1. CAPSICUM *caule herbaceo, fructu oblongo propendente. Capſicum* with an herbaceous Stalk, and an oblong Fruit hanging downward. *Capſicum ſiliquis longis propendentibus. Tourn. Inſt.* 152. *Capſicum* with long hanging Pods.

2. CAPSICUM *caule herbaceo fructu Cordiformi. Capſicum* with an herbaceous Stalk, and a Heart-ſhaped Fruit. This is the *Capſicum ſiliqua propendente oblonga & Cordiformi. Tourn. Inſt.* 152. *Capſicum* with an oblong Heart-ſhaped Pod hanging downward.

3. CAPSICUM *fructu longo, ventre tumido, per ſummum tetragono. Tourn. Inſt.* 153. *Capſicum* with a long Fruit, having a ſwelling Belly, and ſquare at the Top, commonly called Bell Pepper.

4. CAPSICUM *ſiliquis ſurrectis cordiformibus angulatis. Tourn. Inſt. R. H.* 153. *Capſicum* with angular Heart-ſhaped Pods, which grow erect, commonly called Bonnet Pepper.

5. CAPSICUM *caule herbaceo, fructu rotundo glabro. Capſicum* with an herbaceous Stalk, and a round ſmooth Fruit. *Capſicum ſiliquis ſurrectis Ceraſi forma. Tourn. Inſt. Capſicum* with a Cherry-ſhaped Pod growing upright.

6. CAPSICUM *caule herbaceo, fructu ovato. Capſicum* with an oval Fruit. This is the *Capſicum ſiliqua olivæ forma. Tourn. Inſt. Capſicum* with an Olive-ſhaped Pod.

7. CAPSICUM *caule fruticoſo foliis lineari-lanceolatis, fructu pyramidali erecto luteo. Capſicum* with a ſhrubby Stalk, narrow Spear-ſhaped Leaves, and yellow pyramidal Fruit growing upright.

8. CAPSICUM *caule fruticoſo fructu conico erecto rubro. Capſicum* with a ſhrubby Stalk, and a conical red Fruit growing erect, commonly called Hen Pepper.

9. CAPSICUM *minus fructu parvo pyramidali erecto. Sloan. Hiſt. Jam. Vol.* I. p. 240. Smaller *Capſicum* with a ſmall pyramidal erect Fruit, commonly called Barberry Pepper.

10. CAPSICUM *caule fruticoſo, fructu parvo ovato erecto. Capſicum* with a ſhrubby Stalk, and a ſmall oval Fruit growing erect, commonly called Bird Pepper.

The firſt is the common long poded *Capſicum,* which is frequently cultivated in Gardens, of this there is one with red, and another with yellow Fruit, which only differ in the Colour of their Fruit, which Difference is permanent, for I have cultivated both Sorts many Years, and never have found them change from one to the other; but both will vary in the Shape of their Fruit and Manner of growing, for I have raiſed the following Varieties from the ſame Seeds, *viz.*

Capſicum fructu ſurrecto oblongo. Tourn. Capſicum with oblong Fruit growing erect.

Capſicum fructu bifido. Tourn. Capſicum with a divided Fruit.

Capſicum ſiliquis ſurrectis & oblongis brevibus. Tourn. Capſicum with oblong and ſhort Pods growing erect.

Capſicum fructu tereti ſpithameo. Tourn Capſicum with a taper Fruit a Span long.

Of theſe different Forms I have had both the red and yellow, but neither of them have changed their Colours, though they have frequently varied in their Shape.

The 2d Sort with Heart-ſhaped Fruit, is undoubtedly a different Species from the firſt, and never alters toward it, though there are ſeveral Varieties of this, which ſprout from Seeds; of this there are red and yellow Fruit, which do not alter in Colour, though they produce the following Varieties.

Capſicum ſiliqua propendente rotunda & Cordiformi. Tourn. Capſicum with round, Heart-ſhaped, hanging Pods.

Capſicum ſiliqua latiore & rotundiore. Tourn. Capſicum with a larger and rounder Pod.

Capſicum rotundo maximo. Tourn. Capſicum with the largeſt round Fruit.

Capſicum ſiliquis ſurrectis cordiformibus. Tourn. Capſicum with upright Heart-ſharped Pods.

Capſicum ſiliquis ſurrectis rotundis. Tourn. Capſicum with round upright Pods.

The 3d Sort I have cultivated many Years, and have not found it alter, nor have I ſeen any other but the red Fruit of this. It is the only Sort which is proper for pickling; the Skin of the Fruit being fleſhy and tender, whereas thoſe of the other Sorts are thin and tough. The Pods are from one Inch and a Half, to two Inches long, very large, ſwelling, and wrinkled; flated at the Top, where they are angular, and ſometimes ſtand erect, at others grow downward. When the Fruit are deſigned for Pickling, they ſhould be gathered before they arrive to their full Size, while their Rind is tender; then they muſt be ſlit down on one Side to get out the Seeds, after which, they ſhould be ſoaked two or three Days in Salt and Water; when taken out of this and drained, boiling Vinegar muſt be poured on them, in a ſufficient Quantity to cover them, and cloſely ſtopped down for two Months; then they ſhould be boiled in Vinegar to make them green; but they want no Addition of any Sort of Spice, and are the wholeſomeſt and beſt Pickle in the World.

The 4th Sort is alſo a diſtinct Species from all the other: This hath broad wrinkled Leaves, the Fruit is alſo furrowed and wrinkled, generally growing upright, and of a beautiful ſcarlet Colour: Some of the Fruit have their Tops compreſſed like a Bonnet, from whence it had the Name; others upon the ſame Plants will be Bell-ſhaped, but they never alter to any of the other Sorts. This is much tenderer than either of the former, ſo will not ripen its Fruit in the open Air in *England*; but if the Plants are kept under Glaſſes, without any artificial Heat, they will thrive better, and produce more Fruit, than in hot Beds or Stoves.

The 5th Sort was ſent me from the *Spaniſh Weſt-Indies:* This doth not grow ſo tall as the other Sorts, but ſpreads near the Ground. The Leaves come out in Cluſters of a ſhining green, and ſtand on long Foot Stalks. The Fruit is round, ſmooth, of a beautiful red, and the Size of a common Cherry. I have cultivated this ſeveral Years, and have not found it change.

The 6th Sort I had from *Barbadoes:* This is like the common in it's Stalk and Leaves, but the Fruit is oval, and about the Size of a *French* Olive. I have cultivated this many Years, and never found it vary.

Theſe 6 Sorts are annual with us, whatever they may be in their native Countries, for their Stalks decay ſoon after the Fruit is ripe. They are propagated by Seeds, which muſt be ſown upon a hot Bed in Spring; and when the Plants have ſix Leaves, they ſhould be tranſplanted on another hot Bed, at four or five Inches Diſtance, ſhading them from the Sun, until they have taken Root, after which, they muſt have a large Share of Air admitted them in warm Weather, to prevent their drawing up weak, and they require to be frequently watered. Toward the End of *May*, the Plants muſt be hardened by Degrees to bear the open Air, and in *June* they ſhould be carefully taken up, preſerving as much Earth about their Roots as poſſible, and planted into Borders of rich Earth, obſerving to water them well, as alſo to ſhade them until they have taken Root, after which Time, they will require no other Management, but to keep them clean from Weeds, and in very dry Seaſons, to refreſh them two or three times a Week with Water. They flower the End of *June*, and *July*, and their Fruit ripens in Autumn. Theſe Directions are for the Culture of the common Sorts of *Capſicum*, which are generally planted by way of Ornament. But the Plants of the third Sort, which are propagated for Pickling; ſhould be planted in a rich Spot of Ground, in a warm Situation, about a Foot and a Half aſunder, and ſhaded till they have taken Root, and afterward duly watered in dry Weather; which will greatly promote their Growth, and cauſe them to be more fruitful, as alſo enlarge the Size of the Fruit. By this Management, there may be at leaſt two Crops of Fruit for Pickling, obtained the ſame Year, provided the Seaſon proves not too cold; but there ſhould be one Plant, whoſe Pods are large and forward, choſen to ſave Seeds; the firſt Fruits on this ſhould be ſuffered to remain, that they may have Time to perfect their Seeds; before the Froſt comes in Autumn; for the early Froſt generally deſtroys theſe Plants. When the Fruit is fully ripe, it ſhould be cut off, and hung up in a dry Room till Spring, that the Seeds are wanted.

The 4th, 5th, and 6th Sorts being tender, the Plants ſhould be put into Pots, and placed in an old hot Bed under a deep Frame, where they may have Room to grow; or if they are planted in the full Ground, the Plants ſhould be each covered with a Bell Glaſs, to ſcreen them from Cold. Theſe Glaſſes may be ſet off every Day in warm Weather, and placed over them in the Evening again; and at ſuch Times as the Weather is not favourable, the Glaſſes ſhould be raiſed on the contrary Side to the Wind, to admit the freſh Air. With this Care, the Fruit of theſe Sorts will ripen in *England*, which without it, rarely come to Maturity, but in very warm Seaſons.

The Beauty of theſe Plants is in their ripe Fruit, which being of different Forms and Colours, intermixed with the green Leaves, and white Flowers at the ſame Time, make a pretty Appearance in the latter Part of Summer, when they are properly diſpoſed in the Borders of the Flower Garden; or if they are planted in Pots, for the Decoration of Courts, *&c.* being intermixed with other annual Plants, which are in Beauty at the ſame Seaſon, they will make an agreeable Variety; eſpecially, if as many of the different ſhaped Fruits, of both the red and yellow Colours as can be procured, are propagated.

The four laſt Sorts have perennial ſhrubby Stalks, which riſe four or five Feet high; theſe are not ſo hardy as the other, therefore when the Plants have been brought forward in the hot Bed, as directed for the common Sorts, they ſhould be each planted in a Pot filled with rich Earth, and plunged into a very moderate hot Bed, under a deep Frame, where they may have Room to advance; and in warm Weather, they ſhould have a large Share of Air admitted to them, but muſt be covered with Glaſſes every Night, or in cold Weather, and frequently watered. With this Management, they will produce Plenty of Fruit in Autumn, which ripen in Winter; but they muſt be removed into the Stove, on the firſt Approach of Froſt, and placed where they may have a temperate Warmth, in which they will thrive better than in greater Heat; and the Fruit will continue in Beauty moſt Part of Winter, making a pretty Appearance in the Stove, during that Seaſon.

The Seeds of the 7th Sort I received from *Egypt*: The Leaves are much narrower than thoſe of any other Sort I have yet ſeen; the Pods always grow erect, and are produced in great Plenty, ſo that the Plants make a good Appearance for three Months in Winter, and may be preſerved two or three Years; but as the young Plants are the moſt fruitful, few Perſons preſerve the old longer, than till they have perfected Fruit, when they begin to loſe their Beauty. I have cultivated this Sort ſeveral Years, and never found it vary.

The 8th Sort I received from *Antigua*, by the Title of Hen Pepper. This riſes with a ſhrubby Stalk 3 or 4 Feet high, ſending out many Branches toward the Top: The Fruit is about half an Inch long, ſhaped in form of an obtuſe Cone, and of a bright red, growing erect. This ripens its Fruit in Winter, when it makes a pretty Appearance.

The 9th Sort grows about the ſame Height as the 8th, but differs from it in the Shape and Size of the Fruit: Thoſe of this Sort being about the Bigneſs of a Barberry, and nearly of the ſame Shape. This I have long cultivated, and not obſerved it to alter.

The 10th Sort is commonly known by the Title of Bird Pepper in *America*. This riſes with a ſhrubby Stalk four or five Feet high: The Leaves are broad, and rounder at the Ends than thoſe of the other Sorts, and of a lucid green: The Fruit grows at the Diviſions of the Branches, ſtanding erect: Theſe are ſmall, oval, and of a bright red; they are much more ſharp and biting than thoſe of the other Sorts. From the Fruit of this Sort, is made the *Cayan* Butter, or what the Inhabitants of *America* call Pepper Pots, which they eſteem as the beſt of all the Spices. The following is a Receipt for making a Pepper Pot: Take of the ripe Pods of this Sort of *Capſicum*, and dry them well in the Sun, then put them into an Earthen or Stone Pot, mixing Flour between every Strata of Pods, and put them into an Oven after the baking of Bread, that they may be thoroughly dried; after which, they muſt be well cleanſed from the Flour, and if any of the Stalks remain to the Pods, they ſhould be taken off, and the Pods beaten, or ground to fine Powder; to every Ounce of this, add a Pound of Wheat Flour, and as much Leaven as is ſufficient

cient for the Quantity intended; after this has been properly mixed and wrought, it ſhould be made into ſmall Cakes, and baked in the ſame Manner as common Cakes of the ſame Size; then cut them into ſmall Parts, and bake them again, that they may be as dry and hard as Biſcuit, which, beaten into fine Powder and ſifted, may be kept for Uſe. This may be uſed as the common Pepper, to ſeaſon Meat or Broth, or for any of the Purpoſes that the ordinary Pepper is uſed: It gives a better Reliſh to Meat or Sauce, and is found of excellent Uſe to break and diſcuſs the Wind, both in the Stomach and Bowels; therefore is very proper Sauce for ſuch Meats as are flatulent and windy, or that breed much Moiſture or Crudity. A Scruple of this Powder put into Chicken or Veal Broth, is greatly commended for comforting cold Stomachs, or diſpelling Phlegm or viſcous Humours, and helping Digeſtion.

Moſt of the Sorts of *Capſicum* are Natives of both the *Indies*; but they have been brought to *Europe* from *America*, where they abound in all the *Caribbee* Iſlands, and are by the Inhabitants greatly uſed in all their Sauces; but eſpecially by the Negroes, who are great Devourers of them; from whence it had the Appellation of Negro Pepper, and probably the Title of *Guinea* Pepper may have been applied to it for the ſame Reaſon. In *Spain* and *Portugal* the Fruit are much cultivated, and uſed for the ſame Purpoſes as in *America*; but in *England*, they are chiefly cultivated for Ornament, being rarely uſed for Sauce, or Medicine; though much uſed for both, in ſeveral other Countries.

If the ripe Pods of *Capſicum* are thrown into the Fire, they will raiſe ſtrong and noiſome Vapours, which occaſion vehement Sneezing, Coughing, and often Vomiting, in thoſe who are near the Place, or in the Room where they are burnt. Some have mixed the Powder of the Pods with Snuff, to give to others for Diverſion, but where it is in Quantity, there may be Danger in uſing it, for it will occaſion ſuch violent Fits of Sneezing, as to break the Blood Veſſels of the Head, as I have obſerved in ſome to whom it has been given.

CAPSULATE Pods [of *Capſula*, *Lat.* a Cheſt] are little, ſhort dry Seed Veſſels of Plants.

CAPSULATED Plants, are ſuch as produce their Seeds in ſhort Pods or Huſks.

CARACALLA. *See* Phaſeolus.

CARAGANA. *See* Orobus.

CARDAMINDUM. *See* Tropæolum.

CARDAMINE. *Lin. Gen. Plant.* 727. *Tourn. Inſt. R. H.* 224. *Tab.* 109. Ladies Smock.

The *Characters* are,

The Empalement of the Flower is compoſed of four oval, oblong Leaves. The Flower hath four oblong Petals, placed in form of a Croſs, which at their Baſe are erect, but ſpread open above, and are much larger than the Empalement; it hath ſix Stamina, four of which are the Length of the Empalement; the other two, which are oppoſite, are much longer; Theſe are terminated by oblong Heart-ſhaped Summits, which are erect. It hath a ſlender cylindrical Germen, as long as the Stamina, having no Style, but is crowned by an obtuſe Stigma. The Germen turns to a long compreſſed cylindrical Pod, with two Cells, opening in two Valves which twiſt ſpirally, and caſt out the Seeds when ripe, by their Elaſticity.

The *Species* are,

1. CARDAMINE *foliis pinnatis, foliolis radicalibus ſubrotundis, caulinis lanceolatis. Lin. S. P* 656. Ladies Smock with winged Leaves, whoſe ſmaller Leaves at Bottom, are roundiſh, but thoſe on the Stalks Spear-ſhaped. This is the *Cardamine pratenſis magno flore purpuraſcente. Tourn.* Meadow Ladies Smock with a large purpliſh Flower.

2. CARDAMINE *foliis pinnatis, foliolis inciſis, floribus exiguis, caule erecto ramoſo.* Ladies Smock with winged Leaves, cut Lobes, very ſmall Flowers, and an upright branching Stalk. *Cardamine annua exiguo flore. Tourn.* Annual impatient Creſs, with a very ſmall Flower.

3. CARDAMINE *foliis pinnatis, floribus tetrandis. Hort. Cliff.* Ladies Smock, with winged Leaves, and Flowers with four Stamina. *Cardamine quarta Dalechamp. Lugd.* The 4th impatient Creſs of *Dalechamp.*

4. CARDAMINE *pratenſis parvo flore. Tourn. Inſt.* 224. Meadow impatient Creſs with a ſmall Flower.

5. CARDAMINE *foliis pinnatis foliolis palmatis æqualibus petiolatis. Prod. Ley.* 345. Impatient Creſs with winged Leaves, whoſe ſmall Leaves are handed and equal, having Foot Stalks. This is the *Cardamine Sicula, foliis Fumariæ. Tourn. Inſt.* 224. *Sicilian* impatient Creſs with Fumitory Leaves.

6. CARDAMINE *foliis pinnatis, foliolis ſubrotundis anguloſis. Hall. Helv.* 558. Impatient Creſs with winged Leaves, whoſe ſmall Leaves are roundiſh and angular. This is the *Naſturtium aquaticum majus & amarum. C. B. P.* 104. Greater bitter Water Creſs.

7. CARDAMINE *foliis ternatis obtuſis, caule ſubnudo. Lin. Sp. Plant.* 654. Three leaved impatient Creſs with a naked Stalk. This is the *Naſturtium Alpinum trifolium. C. B. P.* 104. Alpine three leaved Creſs.

8. CARDAMINE *foliis ſimplicibus ovatis integerrimis petiolis longis. Flor. Lap.* 206. Impatient Creſs with ſingle, oval, entire Leaves, having long Foot Stalks. This is the *Naſturtium Alpinum Bellidis folio minus. C. B. P.* 105. Smaller Alpine Creſs with a Daiſy Leaf.

9. CARDAMINE *foliis ſimplicibus oblongis dentatis. Lin. Sp. Plant.* 654. Impatient Creſs with ſingle, oblong, indented Leaves. This is the *Naſturtium petræum. Pluk. Alm.* 261. Rock Creſs.

10. CARDAMINE *foliis pinnatis foliolis quinis inciſis. Lin. Sp. Plant.* 655. Impatient Creſs with winged Leaves, having Lobes which are cut. This is the *Cardamine glabra Chelidonii folio. Tourn. Inſt.* 225. Smooth impatient Creſs, with a Celandine Leaf.

The 1ſt Sort grows naturally in the Meadows, in many Parts of *England*; it is called Cuckow Flower, and Ladies Smock: Of this there are four Varieties, *viz.* The ſingle purple, and white Flower, which are frequently intermixed in the Meadows, and the double Flower of both Colours. The ſingle Sorts are ſeldom admitted into Gardens; but as the firſt Sort ſtands in the Liſt of Medicinal Plants, ſo I have enumerated it. The young Leaves of this Plant are gathered in Spring, and put into Sallets inſtead of Creſs: It is ſuppoſed to be an Antiſcorbutick.

The two Varieties with double Flowers, were accidentally found growing in the Meadows, and were tranſplanted into Gardens, where they have been propagated. They deſerve a Place in ſhady moiſt Borders of the Flower Garden, where they will thrive, and make a pretty Appearance during their Continuance in flower. They are propagated by parting and tranſplanting their Roots; the beſt Time for which is in Autumn. They delight in a ſoft loamy Soil, not too ſtiff, and muſt have a ſhady Situation. They flower in *May*, and in cool Seaſons will continue Part of *June*.

The 7th, 8th, and 10th Sorts, grow naturally on the *Alps* and other mountainous Places. I received theſe from *Verona*, in the Neighbourhood of which Place they grow naturally. Theſe are low perennial Plants, which may be propagated by parting their Roots in Autumn, and require a ſtrong Soil, and ſhady Situation: They may alſo be propagated by Seeds, which ſhould be ſown in Autumn on a ſhady Border, where they will ſoon come up, and are never hurt by Froſt, ſo will flower the following Seaſon. Theſe Varieties are preſerved in ſome Gardens, but have little Beauty.

The 9th Sort is a low biennial Plant, which grows naturally in ſeveral Parts of *England* and *Wales*; and is preſerved in ſome Gardens, for Variety. It may be propagated by Seeds, which ſhould be ſown in Autumn, upon poor light Ground in an open Situation, and requires no other Care, but to keep the Plants clear from Weeds. It flowers in *June*, and the Seeds ripen in *July*.

The 6th Sort grows naturally by the Sides of Rivers, and in Ditches, in moſt Parts of *England*. There has been a Variety of this found with double Flowers, but it is not as yet much known. This flowers the latter End of *April*, and in *May*.

The other Sorts are low annual Plants, which grow naturally in ſeveral Parts of *England*, ſo are ſeldom admitted into Gardens. Theſe have the Title of impatient Creſs, from the Elaſticity of their Pods, which, if touched when they are ripe, ſpring open, and caſt out their Seeds with Violence, to a conſiderable Diſtance. Theſe Sorts when young, are by the Country People eaten in Sallets, and have the Flavour of the common Creſs, but milder.

Theſe Plants when admitted into a Garden, propagate in Plenty; for they produce great Quantities of Seeds, which, if permitted to ſcatter, there will be a Supply of Plants, which only require to be kept clean from Weeds, and will thrive beſt in the Shade.

CARDIACA. *Tourn. Inſt. R. H.* 186. *Tab.* 87. Motherwort; in *French Agripaume*.

The *Characters* are,

It hath a cylindrical five cornered Empalement of one Leaf, which is permanent, and divided into five Parts at the Top. The Flower is of the Lip Kind, of one Leaf, with a narrow Tube ſpreading at the Brim; the upper Lip is cylindrical, long, concave, hairy, and blunt at the Point; the lower Lip is reflexed and divided into three equal Parts. It hath four Stamina faſtened to the upper Lip, two of which are longer than the other, which are terminated by oblong compreſſed Summits, which are bifid in the Middle, and covered with globular Spots. It hath four Germen, ſupporting a ſlender Style the Length of the Stamina, crowned with an acute bifid Stigma. The Germen afterward becomes four naked oblong Seeds, incloſed in the Empalement.

The *Species* are,

1. Cardiaca *foliis radicalibus quinquelobatis, caulinis trilobis acutis.* Motherwort whoſe lower Leaves have five Lobes, and thoſe on the Stalks three, with ſharp Points. This is the Common Motherwort.

2. Cardiaca *foliis tripartito multifidis linearibus obtuſiuſculis.* Motherwort with Leaves divided into three Parts, which terminate with many very narrow blunt Segments. *Ballota inodora foliis Coronopi. Amman. Ruth.* Unſavoury black Horehound with a Hartſhorn Leaf.

3. Cardiaca *foliis tripartitis laciniatis, calycibus villoſis.* Motherwort with Leaves divided into three Parts, which are cut on their Edges, and hairy Empalements. This is the *Cardiaca foliis tenuius & profundius inciſis glabra ſive villoſa. Am. Ruth.* 49. Motherwort with narrow and deeply cut Leaves.

The 1ſt Sort is the common Motherwort uſed in Medicine. It grows naturally on the Side of Banks, and in Lanes, in many Parts of *England*, ſo is ſeldom cultivated in Gardens, unleſs for the Sake of Variety.

The lower Leaves of this Sort are large, and divided into five Lobes, the Stalks are ſquare, and riſe from four to five Feet high, which are garniſhed with two Leaves ſtanding oppoſite at each Joint upon long Foot Stalks; theſe are divided into three Lobes, which end in long acute Points. The Flowers come out at every Joint in Whorls, juſt above the Leaves, ſurrounding the Stalk; theſe are commonly red, and are included in prickly Empalements, which afterwards incloſe four naked Seeds. The Root will abide many Years, and if the Seeds are permitted to ſcatter, they will fill the Ground near them with young Plants. It flowers in *July*, and the Seeds ripen in Autumn.

There are two Varieties of this Plant, one of which only differs in the Colour of the Flowers, which are white, and is ſuppoſed to have accidentally riſen from the ſame Seeds; the other hath curled Leaves, and is by Mr. *Ray*, titled *Cardiaca criſpa. Hiſt. Plant.* 572. This is ſuppoſed to be only a ſeminal Variety, but it ſeldom, if ever, goes back to the firſt, ſo far as I have been able to diſcover from many Years Obſervation, in which Time I have frequently raiſed it from Seeds, which have conſtantly produced the ſame Species.

The Seeds of the 2d Sort were ſent me from *Petersburgh*, by Dr. *Amman*, who received them from *Siberia*. This is like the firſt Sort, and the Stalks grow about the ſame Height, but the Leaves are deeply cut into three Parts, which are again divided toward their Extremity into many narrow blunt Segments; the Root is biennial, and decays ſoon after the Seeds are ripe.

The Seeds of the 3d Sort I received from *Iſtria*. This hath a weaker Stalk than either of the former, but riſes near the ſame Height. The lower Leaves are divided into five acute Parts, and thoſe upon the Stalks into three, which are deeply jagged; theſe are ſmooth, and ſtand upon ſhorter Foot Stalks than thoſe of the 1ſt Sort. The Empalement of the Flowers is hairy, but the Flower is like that of the common Motherwort. This is alſo a biennial Plant, which periſhes ſoon after it has perfected its Seeds.

Theſe two Sorts are preſerved in Botanick Gardens, but are rarely cultivated in other Places; they riſe eaſily from Seeds ſown in the Spring upon a Bed of common Earth, and require no other Care but to keep them clean from Weeds, and thin them where they are too cloſe. In Autumn the Plants may be tranſplanted where they are deſigned to flower and ſeed, and require no further Culture. They flower in *July*, and their Seeds ripen in *September*, ſoon after which the Plants decay.

CARDINALS FLOWER. *See* Rapuntium.

CARDIOSPERMUM. *Lin. Gen. Plant.* 447. *Corindum. Tourn. Inſt.* Heart Pea; by the Inhabitants of *America* called Wild Parſley; by the *French*, *Pois de Merveille.*

The *Characters* are,

The Flower hath a permanent Empalement, compoſed of four concave Leaves; it hath four obtuſe Petals, which are alternately larger; it hath a ſmall four-leaved Nectarium encompaſſing the Germen, and eight Stamina, three and three ſtanding oppoſite, the other two on each Side; theſe are terminated by ſmall Summits. The Germen is three cornered, and ſupports three ſhort Styles, crowned by a ſingle Stigma. The Germen becomes a roundiſh ſwollen Capſule with 3 Lobes, divided into 3 Cells, opening at the Top, each having one or two globular Seeds, marked with a Heart.

The *Species* are,

1. Cardiospermum *foliis ternato-ternatis acuminatis inciſis, petiolis longiſſimis.* Heart Seed with trifoliate Leaves, divided again into three Parts, which are ſharp-pointed, and cut on their Edges. This is the *Corindum folio & fructu minori. Tourn. Inſt.* Heart Pea with a ſmaller Leaf and Fruit, called in *America* Wild Parſley.

2. Cardiospermum *foliis quinato-ternatis acuminatis inciſis glabris.* Heart Seed with Leaves divided into five, and thoſe divided into three Parts, which are ſharp-pointed, cut on their Edges, and ſmooth. This is the *Corindum folio ampliori, fructu majore. Tourn. Inſt.* 431. Heart Pea with a larger Leaf and Fruit.

3. Cardiospermum *villoſum foliis quinato-ternatis, inciſis obtuſis, petiolis brevibus.* Hairy Heart Seed with Leaves divided by fives, and thoſe divided again into three Parts, which are bluntly cut, and have ſhort Foot Stalks. *Corindum caule & foliis pubeſcentibus. Houſt. MSS.* Heart Pea with hairy Stalks and Leaves.

The 1ſt Sort riſes with a ſlender channeled climbing Stalk, to the Height of four or five Feet, ſending out many Side Branches, which are garniſhed with Leaves, upon very long Foot Stalks, coming out oppoſite at the lower Part of the Stalk: but upward the Leaves come out on one Side, and the Foot Stalk of the Flower on the other, oppoſite; the Foot Stalks of the Leaves are divided into three, each of which ſuſtain ſmall Leaves, which are again divided into three Parts, ſharply cut on their Edges, and end in ſharp Points. The Foot Stalks of the Flowers are long, naked, and toward the Top, divided into three ſhort ones, each ſuſtaining a ſingle Flower. Immediately under theſe Diviſions, comes out a Tendril, or Claſper, like thoſe of the Vine, but ſmaller, theſe faſten themſelves to whatever grows near them, and thereby are ſupported. The Flowers are ſmall, white, and compoſed of four ſmall concave Petals, two of which ſtanding oppoſite, are larger than the other; when theſe fall away, the Germen becomes a large inflated Bladder, having three Lobes, in each of which is contained one, two, and ſometimes three Seeds, which are round, hard, and the Size of ſmall Peas, each being marked with a black Spot in the Shape of a Heart.

The 2d Sort differs from the firſt in having taller Stalks, the Leaves being firſt divided into five, and again into three Parts. The Foot Stalks are ſhorter, and the Seeds and Bladders in which they are contained are much larger, and the whole Plant is ſmoother.

The 3d Sort hath ſtronger Stalks than either of the former; the Leaves have very ſhort Foot Stalks; they have each five Parts, which are again divided into three obtuſe Lobes, bluntly indented on their Edges, and the whole Plant is covered with a yellowiſh hairy Down.

Theſe Plants grow naturally in both *Indies*, where they riſe 8 or 10 Feet, but in *England* they ſeldom are above half ſo high; they ſend out many Side Branches, which ſpread to a conſiderable Diſtance every Way, and, if permitted, will faſten themſelves to the Plants which are near them by their ſmall Tendrils, and thereby ſpread over them.

They are annual, and periſh ſoon after they have perfected Seeds, and being Natives of hot Countries, they will not thrive in *England* in the open Air. They are propagated by Seeds, which ſhould be ſown upon a hot Bed in Spring; when the Plants are two Inches high, they ſhould be each tranſplanted into a Pot filled with light ſandy Earth, not too rich, then plunged into a very moderate hot Bed, where they muſt be carefully ſhaded until they have taken freſh Root, after which they muſt have a large Share of Air admitted to them every Day, to prevent their being drawn up tall and weak; when their Roots fill the Pots, they ſhould be carefully ſhaken out, preſerving all the Earth to their Roots (for if that ſhould fall off, the Plants will not ſurvive it) then put them into Pots a little larger, filling them up with the ſame light Earth, and place them either under a deep Frame, or behind the tall Plants in a Stove, where they may be ſcreened from the Sun till they are well ſettled in the Pots, after which they may be removed into a Glaſs Caſe, where they may have Room to grow and be ſcreened from the Cold of the Night, but in warm Weather they require a large Share of Air; with this Management they will flower in *July*, and their Seeds ripen in Autumn.

CARDUUS. *Lin. Gen. Plant.* 832. *Tourn. Inſt. R. H.* 440. *Tab.* 255. Thiſtle, in *French Chardon.*

The *Characters* are,

It hath a compound Flower, made up of many hermaphrodite Florets which are fruitful; theſe are included in one common ſcaly Empalement, which is ſwollen in the Middle, each Scale ending in a ſharp Spine; the Florets are Funnel-ſhaped, and of one Leaf, having a ſlender Tube, with an erect Brim, cut into five narrow Segments; each of theſe Florets have five ſhort hairy Stamina, terminated by cylindrical Summits, indented at the Top. In the Center is ſituated an oval Germen, crowned with Down, ſupporting a ſlender Style which is longer than the Stamina, crowned with a ſingle naked indented Stigma. The Germen becomes an oblong four cornered Seed, crowned with Down.

The *Species* are,

1. Carduus *foliis integris ſubtus tomentoſis, ſpinis ramoſis lateralibus. Prod. Leyd.* Thiſtle with entire Leaves, woolly on their under Side, and branching Spines proceeding from the Side of the Stalks. *Carduus humilis aculeatus, Ptarmicæ auſtriacæ foliis. Triumf. obſ.* Low prickly Thiſtle with Leaves like the Eternal Flower.

2. Carduus *foliis ſeſſilibus bifariam pinnatifidis laciniis alternis erectis, calycibus globoſis villoſis. Hort. Up.* Thiſtle with Leaves growing cloſe to the Stalks, which are doubly pinnated, and the Segments alternately erect,

and globular woolly Heads. This is the *Carduus eriocephalus. Dod.pempt.* 723. Woolly-headed Thiſtle, called by ſome Friars Crown.

3. CARDUUS *foliis lanceolatis dentatis ciliatis decurrentibus, ſpinis marginalibus duplicibus.* Thiſtle with Spear-ſhaped indented Leaves, running along the Stalks, with hairy Edges, and double Spines on their Borders. *Acarna major caule folioſo. C. B. P.* Greater Fiſh Thiſtle.

4. CARDUUS *ſquamis calycinis margine apiceque ſpinoſis. Hort. Cliff.* Thiſtle with the Scales of the Empalement, having Spines on their Borders and Points. *Carduus Mariæ. Dalech. Hiſt.* Our Ladies Thiſtle, or Milk Thiſtle.

5. CARDUUS *foliis lanceolatis decurrentibus denticulis inermibus, calyce ſpinoſo. Hort. Cliff.* 392. Thiſtle with Spear-ſhaped Leaves running along the Stalks, with ſmooth Indentures, and prickly Empalement. *Cirſium Anglicum. Ger. Emac. Engliſh* ſoft or gentle Thiſtle.

6. CARDUUS *foliis lanceolatis ſeſſilibus integerrimis margine ſpinis ternatis. Hort. Cliff.* 393. Thiſtle with entire Spear-ſhaped Leaves growing cloſe to the Stalks, whoſe Borders are ſet with triple Spines. This is the *Acarna Theophraſti anguillaræ. Lob. Icon.* 486. The ſuppoſed true Fiſh Thiſtle of *Theophraſtus.*

There are a great Number of Species more than are here enumerated; ſome of which are very troubleſome Weeds in Gardens and Fields, therefore are better to be kept out of both; ſo I thought it needleſs to mention them. The few Sorts here enumerated, being often preſerved in the Gardens of the Curious for Variety, or cultivated for Uſe by ſome, I have therefore inſerted them.

The 1ſt Sort grows naturally in *Sicily.* This is an annual Plant, which riſes with a channeled Stem about a Foot high, ſending out ſeveral Side Branches toward the Top, garniſhed with long narrow Leaves, like thoſe of *Auſtrian Ptarmica,* of a deep green above, but white on their under Side, and placed alternate; juſt below the Foot Stalk of the Leaf come out ſeveral unequal yellow Spines, and at the End of the Branches the Flowers are produced; theſe have very prickly Empalements, under which are placed two long Leaves; the Flowers are purple, and ſhaped like thoſe of the common Thiſtle, but ſmaller; theſe are ſucceeded by oblong ſmooth Seeds, which have a long woolly Down ſitting on their Top. This flowers in *July* and *Auguſt,* and the Seeds ripen in *September*; it is propagated by Seeds, which ſhould be ſown on a Bed of light Earth in Spring, where the Plants are to remain, for they do not bear tranſplanting unleſs when they are young, for they ſend long ſlender Roots deep into the Ground, which, if broken, the Plant ſeldom ſurvives it. The only Care they require, is to keep them clean from Weeds, and thin the Plants where they are too cloſe.

The 2d Sort grows naturally in ſeveral of the Midland Counties of *England.* This is a biennial Plant, which ſends out many long Leaves near the Ground, which are compoſed of ſeveral long Segments, placed by Pairs, and are joined to a winged Border running on each Side the Mid-rib the whole Length; theſe Segments are alternately pointing upward; the under Side of the Leaves, and the Margin of the Mid-rib, are armed with long ſharp Spines, ſtanding every Way. The following Spring, there ariſes from the Center of the Plant one ſtrong channeled Stalk, four or five Feet high, branching every way toward the Top: The Stalk and Branches are garniſhed with the ſame ſhaped Leaves as below, and each Branch is terminated by a ſingle Head of purple Flowers, having a woolly Empalement. This flowers in *June* and *July,* and the Seeds ripen in Autumn. One or two of theſe Plants may be allowed a Place in ſome abject Part of the Garden, for its Singularity. The Seeds ſhould be ſown where the Plants are to remain, and require only to keep them clean from Weeds: The ſecond Year they flower, and then the whole Plant periſhes.

The 3d Sort grows naturally in *Spain* and *Portugal.* This riſes near 3 Feet high, branching toward the Top; the Leaves are long, narrow, and the Edges are ſet cloſely with ſmall Hairs; at every Indenture of the Leaves there comes out two long yellowiſh Spines; at the End of the Branches the Flowers are produced from the Side of the Stalk, which have woolly oval Empalements, cloſely armed with ſlender Spines. The Flowers are yellow, but make no great Appearance, as they advance very little above the Empalement. It flowers in *July* and *Auguſt,* and the Seeds ripen in Autumn. This Plant may be propagated by Seeds, in the ſame Manner as the former Sort. It is called Fiſh Thiſtle, from the Reſemblance which the Spines have to the Bones of Fiſh.

The 4th Sort grows very common on the Side of Banks, and in waſte Land in many Parts of *England,* and is by ſome Perſons blanched and dreſſed, as a curious Diſh. This is a biennial Plant, which ſhould be ſown very thin, and when the Plants come up ſo as to be well diſtinguiſhed, the Ground ſhould be hoed, to cut down all the young Weeds, and the Plants left about a Foot and a Half diſtance; the following Summer, the Ground ſhould be kept clean from Weeds; in Autumn the Leaves of the Plants ſhould be tied up, and the Earth drawn up cloſe to blanch them; when properly whitened, they are fit for Uſe. This is a biennial Plant which periſhes ſoon after the Seeds are ripe.

The 5th Sort is a biennial Plant, which is by ſome cultivated for medicinal Uſe, and has been ſuppoſed a Remedy for ſome Sort of Madneſs. This may be propagated by Seeds, as the ſecond Sort. It grows naturally in the Northern Parts of *England,* and flowers in *June.*

The 6th Sort is ſuppoſed to be the true Fiſh Thiſtle of *Theophraſtus.* This is a biennial Plant, which riſes with an upright Stalk, ſix Feet high, and is garniſhed with long Spear-ſhaped Leaves, armed with triple Spines at every Indenture on their Edges; at the Top of the Stalks the Flowers come out in Cluſters, which are of a purple Colour, and are ſucceeded by ſmooth, oval, black Seeds. It grows naturally in *Sicily* and the *Levant.* It is propagated by Seeds, as the 2d Sort, which ſhould be ſown on a warm Border, otherwiſe the Plants will not live through the Winter. It flowers in *June,* and the Seeds ripen in Autumn.

CARDUUS BENEDICTUS. *See* Cnicus.

CARDUUS FULLONUM. *See* Dipſacus.

CARICA. *Lin. Gen. Plant.* 1000. *Papaya. Tourn. Inſt. R. H.* 659. *Tab.* 441. Papaw, in *French Papuie.*

The *Characters* are,

It is male and female in different Plants; the Flowers of the male have ſcarce any Empalement; they are Funnel-ſhaped, and of one Leaf, having a long ſlender Tube, which expands at the Top, where it is divided into five narrow obtuſe

tuſe Parts, which turn backward; it hath ten Stamina, five of which are alternately longer than the other, and are terminated by oblong Summits. The female Flowers have a ſmall permanent Empalement, indented in five Parts; it hath five long Spear-ſhaped Petals, which are obtuſe, and turn backward at the Top; the oval Germen ſupports five oblong blunt Stigma, which are broad at the Top, and crenated. The Germen afterward becomes a large oblong fleſhy Fruit, having five longitudinal Cells, which are full of ſmall oval furrowed Seeds, incloſed in a glutinous Pulp.

The *Species* are,

1. CARICA *foliorum lobis ſinuatis. Hort. Cliff.* 461. Papaw with the Lobes of the Leaves ſinuated. This is the *Papaya fructu Melopeponis effigie. Plum.* Papaw with the Fruit ſhaped like the Squaſh.

2. CARICA *foliorum lobis integris. Hort. Cliff.* 461. Papaw with the Lobes of the Leaves entire. This is the *Papaya ramoſa fructu pyriformi. Feuil. peruv. 2. p.* 52. *Tab.* 39. Branching Papaw with a Pear-ſhaped Fruit.

There are ſeveral Varieties of the firſt Sort, which differ in the Size and Shape of their Fruit. *Plumier* mentions three of the female or fruitful Papaw, beſide the male, one of which he titles Melon-ſhaped, and the other ſhaped like the Fruit of the Gourd; I have ſeen another in *England*, with a large ſmooth pyramidal Fruit: But theſe are ſuppoſed to be accidental Varieties, which ariſe from the ſame Seeds.

This Plant riſes with a thick, ſoft, herbaceous Stem, 18 or 20 Feet, which is naked till within two or three Feet of the Top, and hath Marks of the fallen Leaves great Part of its Length; the Leaves come out on every Side the Stem, upon very long Foot Stalks; thoſe which are ſituated undermoſt are almoſt horizontal, but thoſe on the Top are erect: Theſe Leaves (in full grown Plants) are very large, and divided into many Parts (or Lobes) which are deeply ſinuated, or cut into irregular Diviſions. The whole Plant abounds with a milky acrid Juice, which is eſteemed good for the Ringworm: The Stem of the Plant, and alſo the Foot Stalks of the Leaves, are hollow in the Middle. The Flowers of the male Plants are produced from between the Leaves, on the upper Part of the Plant, on every Side, which have Foot Stalks near two Feet long, at the Ends of which the Flowers ſtand in looſe Cluſters, each having a ſeparate ſhort Foot Stalk; theſe are of a pure white, and have an agreeable Odour. They are monopetalous, having pretty long Tubes, but are cut at the Top into five Parts, which twiſt backward like a Screw; ſometimes theſe are ſucceeded by ſmall Fruit, about the Size and Shape of a Catherine Pear; which has occaſioned ſome to ſuppoſe it was a diſtinct Species; but I have frequently raiſed this, and the female or fruitful Sort, from the ſame Seeds, and in general the male Flowers fall away, without any Fruit ſucceeding them. The Flowers of the female Papaw alſo come out between the Leaves, toward the upper Part of the Plant, upon very ſhort Foot Stalks, ſitting cloſe to the Stem; they are large, and Bell-ſhaped, compoſed of ſix Petals, and are commonly yellow; but thoſe of the pyramidal Sort, before mentioned, were purple; when theſe fall away, the Germen ſwells to a large fleſhy Fruit, the Size of a ſmall Melon, which are of different Forms; ſome are angular, and compreſſed at both Ends, others are oval, or globular, and ſome pyramidal; the Fruit abounds with the ſame acrid Juice as the Plants. This Fruit, when ripe, is by the inhabitants of the *Caribbee Iſlands* eaten with Pepper and Sugar as Melons, but is much inferiour to a common Melon in Flavour, in its native Country; thoſe which have ripened in *England* were deteſtable; the only Uſe I have known made of this Fruit, was, when they were about half grown, to ſoak them in ſalt Water, to get out the milky Juice, and pickle them for Mangos, for which they have been a good Subſtitute. Theſe Plants are ſuppoſed to be Natives of *America*, from whence they were carried to the *Philipine Iſlands*, and to ſeveral Parts of *India*, where they are now common.

The 2d Sort was ſeen in a Garden at *Lima* by Father *Feuillee*; it was the only Plant he ſaw of that Sort in his Travels. This differs from the other, in having a branching Stalk, the Lobes or Diviſions of the Leaves being entire, and the Fruit ſhaped like a Pear, which he ſays were of different Sizes; that which he deſigned was about 8 Inches long, and three and a Half thick, yellow within and without, and of a ſweet Flavour. The Flower, he ſays, was of a Roſe Colour, and divided into five Parts.

Theſe Plants being Natives of hot Countries, will not thrive in *England*, unleſs in a warm Stove; where there is one of a proper Height to contain them, they deſerve a Place as well as any of the Plants cultivated for Ornament; for when they are grown to a large Size, they make a noble Appearance, with their ſtrong upright Stems, garniſhed on every Side near the Top, with large ſhining Leaves, ſpreading out near three Feet all round the Stem: the Flowers of the male Sort come out in Cluſters on every Side; and the Fruit of the female growing round the Stalks, between the Leaves, ſo different from any thing of *European* Production, may intitle them to the Care of the Curious.

They are eaſily propagated by Seeds, which are annually brought in Plenty from the *Weſt-Indies*. Theſe ſhould be ſown in a hot Bed, early in Spring, that the Plants may obtain Strength before Autumn: When they are near two Inches high, they ſhould be each tranſplanted into a ſmall Pot filled with a light gentle loamy Soil, and plunged into a hot Bed of Tanners Bark; carefully ſhading them from the Sun till they have taken Root; after which they muſt be treated in the ſame Manner as other tender Plants from the ſame Country; but as theſe have ſoft herbaceous Stalks, and abound with a milky Juice, they muſt not have much Water, for they are frequently killed with Moiſture. There ſhould alſo be great Care taken when they are ſhifted from ſmall Pots into larger, to preſerve the whole Ball of Earth to the Roots, for whenever their Roots are left bare, they rarely ſurvive. As the Plants advance in Growth, they will require larger Pots, and when they are too tall to remain under Frames, they muſt be placed in the Tan Bed of the Bark Stove, where they ſhould conſtantly remain, being careful not to give them much Water, eſpecially during the Winter Seaſon; in Summer their Waterings ſhould be often repeated, but given in ſmall Quantities. With this Management I have raiſed Plants near 20 Feet high in 3 Years, which have produced Flowers and Fruit in great Perfection.

CARLINA. *Lin. Gen. Plant.* 830. *Tourn. Inſt. R. H.* 500. *Tab.* 285. The Carline Thiſtle.

The *Characters* are,

It hath a compound Flower, made up of many hermaphrodite Florets which are fruitful; theſe are included in a common ſwollen ſcaly Empalement; the inner Scales are long, and placed in a circular Order. The Florets are Funnel-ſhaped, having a narrow Tube, but Bell-ſhaped above, and cut into five Parts at the Brim; theſe have each five ſhort hairy Stamina, terminated by cylindrical Summits; in the Center is ſituated a ſhort Germen crowned with Down, ſupporting a ſlender Style the Length of the Stamina, crowned with an oblong bifid Stigma. The Germen becomes a ſingle taper Seed, crowned with branching plumoſe Down.

The *Species* are,

1. CARLINA *caule multifloro corymboſo, floribus terminalibus. Hort. Cliff.* Carline Thiſtle with many Flowers in a Corymbus, which terminate the Stalk. *Carlina ſylveſtris vulgaris. Cluſ. Hiſt.* Common wild Carline Thiſtle.

2. CARLINA *floribus ſeſſilibus, lateralibus pauciſſimis. Sauv. Meth.* Carline Thiſtle with a few Flowers growing cloſe to the Side of the Stalk. *Carlina ſylveſtris minor Hiſpanica. Cluſ. Hiſt.* Small wild *Spaniſh* Carline Thiſtle.

3. CARLINA *caule unifloro flore breviore. Hort. Cliff.* 395. Carline Thiſtle with one ſhorter Flower on each Stalk. This is the *Carlina acaulos magno flore albo. C. B. P.* Low Carline Thiſtle with a large white Flower.

4. CARLINA *caule trifloro dichotomo intermedio ſeſſili. Sauv. Monſp.* 293. Carline Thiſtle with three Flowers on a Stalk, placed at the Diviſion of the Branches, the middle one ſitting cloſe upon the Stalk. This is the *Acarna flore purpureo rubente patulo. C. B. P.* 372. Fiſh Thiſtle with a rediſh purple ſpreading Flower.

5. CARLINA *caule multifloro ſubdiviſo, floribus ſeſſilibus. Prod. Leyd.* Carline Thiſtle with many Flowers on a Stalk, which is ſubdivided, and the Flowers ſit cloſe on the Stalks. This is the *Acarna apula umbellata. Colum. cephr.* 27. Umbellated Fiſh Thiſtle of *Apulia.*

The 1ſt Sort grows naturally on ſterile Ground in moſt Parts of *England*, ſo is rarely admitted into Gardens. The others are preſerved in Botanick Gardens for Variety. They grow naturally in the Southern Parts of *Europe.*

They may all be propagated by ſowing their Seeds in Spring on a Bed of freſh undunged Earth, where they are deſigned to remain; for, as they ſend forth Tap Roots, they do not well bear tranſplanting. When the Plants appear above Ground, they ſhould be carefully weeded; and, as they grow in Size, ſhould be thinned, leaving them about ten Inches or a Foot aſunder. The 2d Year moſt of theſe Plants will flower; but, unleſs the Summer proves dry, they rarely produce good Seeds in *England*; and moſt of them decay ſoon after they have flowered; therefore it is difficult to maintain them in this Country.

CARNATION. *See* Dianthus.

CARPINUS. *Lin. Gen. Plant.* 952. *Tourn. Inſt. R. H.* 582. Hornbeam, or Hardbeam, in *French Charme.*

The *Characters* are,

I hath male and female Flowers, growing ſeparate on the ſame Plant. The male Flowers are diſpoſed in a cylindrical Rope or Katkin, which is looſe and ſcaly, each Scale covering one Flower, which hath no Petals, but ten ſmall Stamina, terminated by compreſſed hairy Summits. The female Flowers are diſpoſed in the ſame Form, and are ſingle under each Scale; theſe have one Petal, which is ſhaped like a Cup, cut into ſix Parts, and two ſhort Germen, each having two hairy Styles, crowned by a ſingle Stigma. The Katkin afterward grows large, and at the Baſe of each Scale is lodged an oval angular Nut.

The *Species* are,

1. CARPINUS *ſquamis ſtrobilorum planis. Hort. Cliff.* 447. Hornbeam with flat Scales to the Cones. This is the *Carpinus. Dod. Pempt.* 841. Common Hornbeam.

2. CARPINUS *ſquamis ſtrobilorum inflatis. Hort. Cliff.* 447. Hornbeam with inflated Scales to the Cones. This is the *Oſtrya ulmo ſimilis, fructu racemoſo lupulo ſimilis. C. B. P.* 427. The Hop Hornbeam.

3. CARPINUS *foliis ovato-lanceolatis ſerratis ſtrobilis brevibus.* Hornbeam with oval Spear-ſhaped ſawed Leaves, and the ſhorteſt Cones. This is the *Carpinus Orientalis folio minori, fructu brevi. T. Cor.* 40. Eaſtern Hornbeam, with a ſmaller Leaf and ſhorter Fruit.

4. CARPINUS *foliis lanceolatis acuminatis, ſtrobilis longiſſimis.* Hornbeam with pointed Spear-ſhaped Leaves, and the longeſt Cones. This is the *Carpinus Virginiana floreſcens. Pluk. Virginia* flowering Hornbeam.

The 1ſt Sort is very common in many Parts of *England*, but is rarely ſuffered to grow as a Timber Tree, being generally reduced to Pollards by the Country People; yet where the young Trees have been properly treated, they have grown to a large Size. I have ſeen ſome of them in Woods, upon a cold ſtiff Clay, which have been near ſeventy Feet high, with large noble fine Stems, perfectly ſtrait and ſound. Of late Years, this has been only conſidered as a Shrub, and never cultivated but for Under-wood in the Country, and in the Nurſeries to form Hedges, after the *French* Taſte; for in moſt of their great Gardens, their Cabinets, *&c.* are formed of theſe Trees, as are their Trellaſſes and Hedges which ſurround their Plantations. But ſince theſe Sort of Ornaments have been almoſt baniſhed from the *Engliſh* Gardens, there has been little Demand for theſe Trees in the Nurſeries.

As this Tree will thrive upon cold, barren, expoſed Hills, and in Situations where few other Sorts will grow, it may be cultivated to great Advantage by the Proprietors of ſuch Lands. It will reſiſt the Violence of Winds better than moſt other Trees, and is by no Means ſlow in its Growth. But where theſe are propagated for Timber, they ſhould be raiſed from Seeds, on the ſame Soil and Situation, where they are deſigned to grow; and not brought from better Land, and a warmer Situation, as is too frequently practiſed. They may be propagated by Layers, where they are intended for Hedges or Under-wood; for which thoſe ſo raiſed will anſwer the Purpoſe full as well as thoſe raiſed from Seeds, but the latter muſt always be preferred for Timber Trees.

The Seeds ſhould be ſown in Autumn, ſoon after they are ripe; for if they are kept out of the Ground till Spring, the Plants will not come up till the following Year. When the Plants appear, they muſt be kept very clean from Weeds, and treated as other Foreſt Trees; in two Years Time they will be fit to tranſplant, for the ſooner all Trees which are deſigned for Timber are planted where they are to remain, the larger they will grow, and the Wood will be firmer and more durable. If theſe are not intermixed with other Kinds of Trees, they ſhould be planted pretty cloſe; eſpecially on the

Outſide of the Plantations, that they may protect and draw each other up: If they are kept clean from Weeds 3 or 4 Years, it will greatly promote their Growth, after which the Plants will have obtained ſufficient Strength to keep down the Weeds.

As the Trees advance in Growth, they muſt be thinned, which ſhould be done with Caution, cutting away the moſt unpromiſing Plants gradually, ſo as not to let too much cold Air at once, to thoſe which are left, eſpecially on the Borders of the Plantation. For in all young Plantations of Timber, it is much the better Method, to take away a few Trees every Year, than as is commonly practiſed, to let all grow till fit to cut as Underwood, and then cut all away, except thoſe intended for Timber; whereby ſo much cold Air is ſuddenly let in upon them, as to ſtop their Progreſs for ſome Years: But by this Method a preſent Advantage is gained, which is now more generally attended to, than future Profit.

The Timber of this Tree is very tough and flexible, ſo might be converted to many uſeful Purpoſes, if ſuffered to grow to a proper Size; but as they have been generally treated otherwiſe, the principal Uſes it has been applied to, was for Turnery Ware, for which it is excellent Wood, alſo for making Mill Cogs, Heads of Beetles, &c. It is alſo excellent Fuel.

The Leaves of this Tree remain upon it, till the young Buds in the Spring thruſt them off, ſo they afford much Shelter to Birds in Winter; and this renders them very proper to plant round the Borders of Plantations in expoſed Situations, where they will defend the other Trees in Winter, and thereby greatly promote their Growth.

The Hop Hornbeam ſheds its Leaves in Winter, with the Elm, and other diciduous Trees. This Tree, though but lately much known in *England*, is very common in *Germany*, growing promicuouſly with the common Sort. It is alſo ſaid to grow plentifully in *North America*, but it is doubtful whether that is not a different Sort from this. The Hop Hornbeam is of quicker Growth than the common Sort, but what the Wood of that will be I know not; for there are but few of the Trees in *England* growing upon their own Roots, moſt of them being grafted on the common Hornbeam, which is the uſual Method of propagating them in the Nurſeries; but the Trees ſo raiſed are of ſhort Duration, for the Graft generally grows much faſter than the Stock, ſo that in a few Years there is a great Diſproportion in their Size; and where they happen to ſtand expoſed to ſtrong Winds, the Graft is frequently broken from the Stock, after many Years Growth; for which Reaſon, I would caution every Perſon not to purchaſe any of theſe Trees ſo propagated.

The *Virginian* flowering Hornbeam is ſtill leſs common than the laſt, and only to be ſeen in curious Gardens; it is equally as hardy as the other, and may be increaſed by Layers. This Sort will grow to the Height of 30 Feet, or more, and is of quicker Growth than either of the former Sorts: It ſheds its Leaves in Autumn, about the ſame Time with the Elm; and, during the Time of its Verdure, makes a good Appearance, being well clothed with Leaves, of a deep ſtrong green Colour, reſembling more the long leaved Elm than the Hornbeam.

The Eaſtern Hornbeam is a Tree of humble Growth, rarely riſing above 10 or 12 Feet in this Country, ſhooting out many horizontal irregular Branches, ſo cannot eaſily be trained up to a Stem. The Leaves are much ſmaller than thoſe of the common Hornbeam, and the Branches grow cloſer together, therefore may be very proper for low Hedges in Gardens; being a very tonſile Plant, and may be kept in leſs Compaſs than almoſt any other deciduous Tree. It is as hardy as any of the Sorts, and may be propagated in the ſame manner; but at preſent it is rare in the *Engliſh* Nurſeries.

CARROTS. *See* Daucus.

CARTHAMUS. *Lin. Gen. Plant.* 838 *Tourn. Inſt. R. H.* 457. *Tab.* 248. Baſtard Saffron, or Safflower, in *French Cartame*, or *Saffran Batard.*

The *Characters* are,

It hath a Flower compoſed of ſeveral hermaphrodite Florets, in one common ſcaly Empalement. The Scales are compoſed of many flat Leaves, broad at their Baſe, ending in a Spine, and ſpread open below. The Florets are Funnel-ſhaped, of one Leaf cut into five equal Segments at the Top; theſe have five ſhort hairy Stamina, terminated by cylindrical tubular Summits; in the Center is ſituated a ſhort Germen ſupporting a ſlender Style the Length of the Stamina, crowned by a ſingle Stigma. The Germen becomes a ſingle, oblong, angular Seed, incloſed in the Empalement.

The *Species* are,

1. CARTHAMUS *foliis ovatis integris ſerrato-aculeatis. Hort. Cliff.* 394. Baſtard Saffron with oval entire Leaves, which have ſpiny Serratures. This is the *Carthamus officinarum, flore croceo. Tourn. Inſt.* Baſtard Saffron of the Shops, with a Saffron coloured Flower.

2. CARTHAMUS *caule piloſo ſupernè lanato, foliis inferioribus pinnatifidis, ſummis amplexicaulibus dentatis. Hort. Upſal.* 251. *Carthamus* with a hairy Stalk, woolly above, and having under Leaves which are indented; and the upper embracing the Stalk. This is the *Atractylis lutea. C. B. P.* Yellow Diſtaff Thiſtle.

3. CARTHAMUS *caule glabro, foliis caulinis aculeatis, profundè dentatis, ſemiamplexicaulibus, capitulis ovatis. Carthamus* with a ſmooth Stalk garniſhed with prickly Leaves, deeply indented and Half ſurrounding the Stalk, and oval Heads. *Cnicus Creticus Atractylidis folio & facie, flore leucophæo. Tourn. Cnicus* of *Crete* with a Leaf and Appearance of Diſtaff Thiſtle, and a whitiſh Flower.

4. CARTHAMUS *foliis lanceolatis, acuminato-ſerratis. Hort. Cliff.* 135. *Carthamus* with Spear-ſhaped Leaves ſharply ſawed. This is the *Cnicus perennis cæruleus Tingitanus. H. L.* 162. Blue perennial *Cnicus* of *Tangier.*

5. CARTHAMUS *foliis caulinis linearibus pinnatis longitudine plantæ. Lin. Sp.* 831. *Carthamus* with narrow winged Leaves on the Stalks, the Length of the Plant. This is the *Cnicus cæruleus humilis Montis Lupi. H. L.* Dwarf *Cnicus* of Mount *Lupus* with a blue Flower.

6. CARTHAMUS *caule erecto piloſo, foliis lanceolatis hirſutis, capite maximo. Carthamus* with an upright hairy Stalk, Spear-ſhaped hairy Leaves, and a very large Head. *Cnicus cæruleus aſperior. C. B. P.* Rougher blue *Cnicus.*

7. CARTHAMUS *foliis enſiformibus ſinuato-dentatis Prod. Leyd. Carthamus* with Sword-ſhaped Leaves ſinuated and indented. *Cnicus Hiſpanicus arboreſcens fœtidiſſimus. Tourn.* Stinking ſhrubby *Cnicus* of *Spain.*

8. Carthamus *foliis lineari-lanceolatis ſpinis marginalibus duplicibus, floribus ſolitariis terminalibus. Carthamus* with narrow Spear-ſhaped Leaves, double Spines on their Edges, and a ſingle Flower terminating the Stalk. This is the *Carlina minima caulodes Hiſpanica. Barrel. Icon.* The leaſt ſtalky *Spaniſh Carline* Thiſtle.

This 1ſt Sort grows naturally in *Egypt*, and ſome of the warm Parts of *Aſia*. I have frequently received the Seeds from the *Britiſh* Iſlands in *America*, but whether they were originally carried thither, or grow naturally, I could never be rightly informed. It is at preſent cultivated in the *Levant* and many Parts of *Europe*, from whence great Quantities of Safflower are annually imported to *England*, for Dying and Painting.

This is an annual Plant, which riſes with a ſtiff ligneous Stalk, two Feet and a Half, or three Feet high, dividing upward into many Branches, garniſhed with oval pointed Leaves, ſitting cloſe to the Branches: Theſe are entire, and ſlightly ſawed on their Edges, each Tooth being terminated by a ſhort Spine. The Flowers grow ſingle at the Extremity of each Branch: The Heads of Flowers are large, incloſed in a ſcaly Empalement, each Scale is broad at the Baſe, flat, and formed like a Leaf of the Plant, terminating in a ſharp Spine. The lower Part of the Empalement ſpreads open, but the Scales above cloſely embrace the Florets, which ſtand out near an Inch above the Empalement; theſe are of a fine Saffron Colour, and this is the Part which is gathered for the Uſes above mentioned. When the Florets decay, the Germen which is ſituated in each, become ſingle, oblong, angular Seeds, of a white Colour, and have a pretty ſtrong Shell or Cover to them. It flowers in *July* and *Auguſt*, and the Seeds ripen in Autumn, but if the Seaſon proves cold and moiſt when the Plants are in flower, there will be no good Seeds produced; ſo that there are few Seaſons wherein the Seeds come to Perfection in *England*.

The Seeds are ſometimes uſed in Medicine, and accounted a pretty ſtrong Cathartick, but at preſent they are ſeldom preſcribed. It is propagated by Seeds, which ſhould be ſown in *April*, upon a Bed of light Earth: The beſt Way is to ſow them in Drills, drawn at a Foot and a half Diſtance, in which the Seeds ſhould be ſcattered thinly, for the Plants muſt not ſtand nearer each other, than a Foot in the Rows; but as ſome of the Seeds will fail, a greater Quantity ſhould be ſown, it will be eaſy to thin the Plants, when the Ground is hoed. If the Seeds are good, the Plants will appear in leſs than a Month; and in a Fortnight or three Weeks after, it will be proper to hoe the Ground, to deſtroy the Weeds, and the Plants ſhould be thinned where they are too cloſe, but at this Time they ſhould not be ſeparated to their full Diſtance, leſt ſome of them ſhould afterward fail; ſo that if they are now left ſix Inches aſunder, there will be Room enough for the Plants to grow, till the next Time of Hoeing, when they muſt be thinned to the Diſtance they are to remain for good: After this they ſhould have a third Hoeing, which, if carefully performed in dry Weather, will deſtroy the Weeds and make the Ground clean, ſo that the Plants will require no farther Care, till they come to flower; when, if the Safflower is intended for Uſe, the Florets ſhould be cut off from the Flowers as they come to Perfection; but this muſt be performed, when they are perfectly dry, and then they ſhould be dried in a Kiln, with a moderate Fire, in the ſame manner as the true Saffron, which will prepare the Commodity for Uſe.

But if the Plants are deſigned for Seed, the Flowers muſt not be gathered; for if the Florets are cut off, it will render the Seeds abortive though they may ſwell and grow to their uſual Size, as I have frequently experienced, yet when they are broken, there will be found nothing more than a Shell, without any Kernel. This frequently happens in wet cold Seaſons; though in very wet Years the Germen will rot, and never come ſo forward as to form a Shell.

I have been informed, that this Plant was formerly cultivated in the Fields in *England*, for the Dyers Uſe, and particularly in *Glouceſterſhire*, where the common People frequently gathered the Florets, and dried them, to put into their Puddings and Cheeſecakes, to give them a Colour; but ſome by putting in too great a Quantity, gave their Puddings a Cathartick Quality.

If this Plant was ever cultivated here in great Quantity, it is ſurpriſing how it came to be ſo totally neglected, that at preſent there are not the leaſt Traces in any Part of *England*, of its ever having been cultivated, and the Commodity is ſcarce known, except to thoſe who deal in it; the Quantity which is annually conſumed in *England* is ſo great, as to make a very conſiderable Article in Trade; ſo that it might be very well worthy of the publick Attention; for although the Seeds ſeldom come to Perfection in *England*, yet theſe might be annually procured from Abroad, and the Plants would conſtantly produce the Flower, which is the only Part uſeful: Or if this Plant was introduced to *Carolina*, it might be there cultivated to as great Advantage, as in any Part of the World; for there the Seeds will conſtantly ripen; and, as this Country is furniſhed with it from the *Mediterranean*, where there is great Danger of our Navigation being interrupted; ſo it ſhould excite the Inhabitants of our *American* Colonies, to make Trial of as many of the Vegetables, as there is a Probability of ſucceeding there, and can be procured, which are of real Uſe in any of the Manufactures of this Country. The Seeds of this Plant may be eaſily procured from the *American* Iſlands, and in one Seaſon, may be multiplied in ſo great Quantity, as to furniſh a whole Province.

This Plant is cultivated in great Plenty, in ſome Parts of *Germany*, where the Seeds conſtantly come to Perfection; and as I have obtained a ſhort Account of their Method of Cultivation, from a curious Gentleman of that Country, ſo I ſhall Inſert it for the Benefit of thoſe who may be induced to engage in this Undertaking.

The Ground in which they propoſe to ſow the *Carthamus*, has always a double Fallow given to it, firſt to deſtroy the Weeds, and afterward to make it fine. They make Choice of their lighteſt Land, and ſuch as is clear from Couch Graſs, and other troubleſome Weeds. After the Land has been fallowed a Summer and Winter, in which Time they give it four Ploughings, and harrow it between each, to break the Clods, and pulveriſe it; in the latter End of *March*, they give it the laſt Ploughing, when they lay it in narrow Furrows of about five Feet or a little more, leaving a Space of two Feet between each: Then they harrow theſe Lands to make them level, and after it is finiſhed, they ſow the Seeds in the following Manner. With a ſmall Plough, they draw four ſhallow Furrows in each Land, at near a Foot and half Diſtance, into which they ſcatter the Seeds thinly; then with a Harrow, whoſe Teeth are little more than one Inch long, they draw the Earth into the Drills to cover the Seeds; after this, they draw a Roller over the Ground, to ſmooth and ſettle it. When the Plants are come up, ſo as to be diſtinguiſhed, they hoe the Ground to deſtroy the Weeds; and at this firſt Operation, where the Plants happen to be cloſe, they cut up the leaſt promiſing, leaving them all ſingle, at the Diſtance of three or four Inches; which they always ſuppoſe, will be ſufficient Room for their Growth, till the ſecond Time of Hoeing, which muſt be performed in about five Weeks after the firſt; in which they are guided by the Growth of the Weeds, for as this Work is performed with a *Dutch* Hoe, they never ſuffer the Weeds to grow to any Size, before they cut them; in which they judge right, for when the Weeds are ſmall, one Man will hoe as much Ground in a Day, as can be performed by three, when they are permitted to grow large; and the Weeds will be more effectually deſtroyed.

They give a third Hoeing to the Plants, about 5 or 6 Weeks after the ſecond; which generally makes the Ground ſufficiently clean, till the *Carthamus* is pulled up. When the Plants begin to flower, and have thruſt out their Florets (or Thrum) to a proper Length, they go over the Ground once a Week to gather it; and as it is from Time to Time gathered, it is dried in a Kiln for Uſe. There is uſually a Succeſſion of Flowers for 6 or 7 Weeks. After the Crop is gathered, the Stalks are pulled and tied in Bundles for Fuel, and when they have been ſet up a few Days to dry, they are carried off, and the Ground ploughed for Wheat; which they ſay, always ſucceeds well after this Plant.

The good Quality of this Commodity is chiefly in the Colour, which ſhould be of a bright Saffron, and herein that which is cultivated in *England* often fails; for if there happens much Rain, during the Time the Plants are in flower, it will cauſe the Florets to change to a dark or dirty yellow, which will alſo befal that which is gathered when there is any Moiſture remaining upon it; therefore great Care muſt be taken not to gather it till the Dew is quite dried off, nor ſhould it be preſſed together till it has been dried on the Kiln. The Manner of doing this being the ſame as for the true Saffron, I ſhall not mention it here, but deſire the Reader to turn to the Article Crocus, where it is fully treated.

In *Spain* this Plant is cultivated in Gardens, as Marigolds in *England*, to put in their Soups, Olios, and other Diſhes, to give them a Colour. The *Jews* alſo are very fond of this, and mix it in moſt of their Viands; it is very probable they were the Perſons who firſt carried the Seeds to *America*, and taught the Inhabitants the Uſe of it, where it is now as commonly uſed by the *Engliſh*, as in any Part of *Europe*.

This Plant may be admitted to a Place in the Borders of large Gardens, where it will add to the Variety, during the Time of its Continuance in Flower, which is commonly two Months, or ten Weeks; for if the Seeds are ſown the Beginning of *April*, the firſt Flowers will appear the Middle of *July* at fartheſt, and there will be a Succeſſion on the Side Branches, till the End of *September*, or in mild warm Seaſons till the Middle of *October*, during which Time the bright Saffron coloured Flowers make a pretty Appearance; and if the Plants are ſupported to prevent their being broken, or blown down by the Wind, they will not interfere with other Flowers, becauſe theſe have a regular upright Growth.

When they are cultivated for this Purpoſe, the Seeds ſhould be ſown in the Places where the Plants are deſigned to remain, becauſe they do not bear tranſplanting well; therefore three or four Seeds ſhould be ſown in each Patch, leſt any of them ſhould fail, and when the Plants are grown ſo ſtrong as to be out of Danger; the moſt promiſing in each Patch ſhould be left, and the others pulled up, that they may not draw, or injure thoſe which are to ſtand.

The 2d Sort grows naturally in the South of *France*, *Spain*, and *Italy*, where the Women uſe the Stalks for Diſtaffs, from whence it had the Title of Diſtaff Thiſtle. It is by ſome called Baſtard wild Saffron. The Leaves are ſometimes ordered for Medicine, and ſuppoſed to have the ſame Virtues as *Carduus Benedictus*.

This Plant is annual, periſhing ſoon after the Seeds are ripe, the lower Leaves ſpread flat upon the Ground; theſe are five or ſix Inches long, narrow, and deeply indented on both Sides; they are hairy, and have a few ſoft Spines on their Edges; the Stalk riſes about two Feet high, covered with Hairs, and garniſhed with oblong hairy Leaves, which embrace the Stalk with their Baſe, and are deeply ſinuated, with ſharp Thorns growing on their Edges. The upper Part of the Stalk divides into many Branches, garniſhed with Leaves of the ſame Form, but are ſmaller. The Flowers are produced at the End of the Branches, having a Cluſter of ſtiff, hard, prickly Leaves below the ſcaly Empalement, which contains many yellow hermaphrodite Flowers, ſucceeded by oblong angular Seeds. It flowers in *June* and *July*, and the Seeds ripen in Autumn. If the Seeds are ſown in Autumn, the Plants will flower early the following Summer, ſo there will be a Certainty of good Seeds. They may be ſown upon a Bed of Earth in any Situation, and will require no other Culture, but to keep them clean from Weeds, and thin the Plants where too cloſe; this being medicinal, is kept in ſome Gardens, but it hath little Beauty.

There is a Variety of this, which grows much taller, the Heads larger, and the Leaves placed cloſer on the Stalks. This was found by *Tournefort* in the *Levant*.

The 3d Sort was alſo diſcovered by *Tournefort* in the Iſland of *Crete*, from whence he ſent the Seeds to the Royal Garden at *Paris*. This differs from the former, in having a ſmooth Stalk, the Leaves are very ſtiff, deeply indented, ſmooth, and are armed with very ſtrong Spines; the Heads of the Flowers are oval, the Florets white, and the Plant grows near four Feet high. This is an annual Plant, which may be ſown and treated as the former, and flowers about the ſame Time.

The 4th Sort hath a perennial Root, but an annual Stalk. This grows naturally in *Spain*, and was firſt brought to *England* from *Tangier*; the Seeds are never perfected in *England*, ſo it is propagated by parting the Roots. The beſt Time for tranſplanting and parting them, is about the Beginning of *March*; they ſhould have a dry Soil, and a warm Situation, otherwiſe they are liable to be deſtroyed in ſevere Winters. The Stalks of this riſe about a Foot and a Half high, ſeldom putting out any Branches; they are garniſhed with narrow Spear-ſhaped Leaves, the whole Length of the Stalk; theſe are deeply ſawed on their Edges, each of the Serratures ending in a ſharp Point. The Stalk is terminated by one large ſcaly Head of blue Flowers, ſhaped like thoſe of the other Species.

The 5th Sort grows naturally in the South of *France*, *Spain*, and *Italy*. This hath a perennial Root, and an annual Stalk, which riſes about ſix Inches high, channeled, hairy, and garniſhed with long narrow Leaves, ending in ſeveral ſharp Spines, and their Edges are indented, each Indenture ending in a Spine. Each Stalk is terminated by one large Head of blue Flowers, having a leafy Empalement, compoſed of very broad Scales, each ending in a ſharp Spine. It flowers in *June*. This Sort is difficult to propagate in *England*, for the Roots do not put out Offſets like the former, ſo is only to be raiſed from Seeds, which do not come to Perfection here, unleſs the Seaſon proves warm and dry. This ſhould have a dry Soil, and warm Situation.

The 6th Sort is ſuppoſed by ſome, to be the ſame with the 4th, which is a great Miſtake, for they are extremely different. This riſes with a ſingle Stalk, about 2 Feet high, of a purpliſh Colour, hairy, and channeled. This is pretty cloſely garniſhed with broad Spear-ſhaped Leaves, ſharply ſawed on their Edges, and covered with a ſhort hairy Down. The Stalk is terminated by a ſingle large Head of blue Flowers, having a ſcaly Empalement, compoſed of two Orders of Leaves, the outer being broad, long, and armed with ſharp Spines on their Edges; the inner are narrow, and terminate with a ſharp Thorn. It flowers in *June* and *July*, and the Seeds ripen in Autumn. This Sort may be propagated by parting their Roots, which ſhould be performed in Autumn, when the Leaves decay. It ſhould have a light dry Soil, in which it will endure the Cold of our Winters, and continue many Years. It may alſo be propagated by Seeds, which ripen well in dry Seaſons, but in wet Summers the Seeds are generally abortive; this requires no Care but to keep it clean from Weeds. It grows naturally in *Spain*, *France*, and *Italy*, on arable Land.

The 7th Sort I received from *Andaluſia*, where it grows naturally in great Plenty. This riſes with a ſhrubby perennial Stalk, 8 or 10 Feet high dividing into many Branches; theſe are garniſhed with pretty long Sword-ſhaped Leaves, which are indented, armed with Spines on their Edges, and embrace the Stalks with their Baſe. The Branches are terminated by large, ſcaly, prickly Heads of yellow Flowers, which come out in *July*, but are never ſucceeded by Seeds here, ſo can only be propagated by Side Shoots, ſliped from the Branches in Spring, and planted in Pots filled with light ſandy Earth, and plunged into a moderate hot Bed, obſerveing to ſhade them till they have taken Root; then they muſt be gradually hardened, and removed into the open Air, and when they have obtained Strength, they may be ſeparated, and ſome of them planted in a warm dry Border, where they will endure the Cold of our ordinary Winters; but, in ſevere Froſt, they are frequently deſtroyed, therefore a Plant or two ſhould be kept in Pots, and ſheltered in Winter to preſerve the Species.

The Seeds of the 8th Sort were ſent me from *Spain*, where it grows naturally. This hath a perennial Root, but an annual Stalk, which is ſingle, and never puts out any Side Branches; this is white, ſmooth, and channeled. The Leaves are long, narrow, of a pale green, and cloſely armed on their Edges with ſhort ſtiff Spines, which come out double. The Stalks are terminated by ſingle, oval, ſcaly Heads of white Flowers, each Scale being terminated by a purpliſh Spine. This ſquamous Empalement is cloſely joined at the Top, ſo as few of the hermaphrodite Florets appear viſible above it; and this is guarded by a Border of long narrow prickly Leaves, ſurrounding the Head, which riſe conſiderably above the Flowers. This Plant flowers in *July* and *Auguſt*, but ſeldom perfects Seeds in *England*. It ſhould be planted in a light Soil, and a warm Situation, where it will live abroad in our ordinary Winters, but in ſevere Froſt is ſometimes deſtroyed. I could never propagate this Plant any other Way than by Seeds, which ſeldom ripen here.

CARUM. *Lin. Gen. Plant.* 327. *Carvi. Tourn. Inſt. R. H.* 306. *Carui*, or Caraway.

The *Characters* are,

It hath an umbellated Flower, compoſed of ſeveral ſmall Umbels, which are formed as Rays to the general Umbel, neither of which have any Involucrum; the ſingle Flowers have very ſmall Empalements. The Flower hath 5 *Heart-ſhaped Petals, obtuſe, and turned inward at the Points; it hath* 5 *hairy Stamina, the Length of the Petals, terminated by roundiſh Summits. The Germen is ſituated under the Flowers, ſupporting* 2 *ſmall Styles, crowned by a ſingle Stigma. The Germen becomes an oblong channeled Fruit, dividing into* 2 *Parts, each having an oblong furrowed Seed.*

The *Species* are,

1. CARUM *foliis pinnatifidis planis, umbellulis inæqualibus confertis.* Caraway with plain Leaves, ending with many Points, and unequal Umbels, growing cloſe. This is the *Cuminum pratenſe, Carui officinarum. C. B. P.* 159. Meadow Cumin, or Common Caraway.

2. CARUM *foliis capillaribus multifidis, umbellis laxis.* Caraway with capillary multifid Leaves, and looſe Umbels. This is the *Carui Hiſpanicum, ſemine majore, & latiore. Juſſ. Spaniſh* Caraway with a larger Seed.

The 1ſt Sort is the common Caraway, whoſe Seeds are greatly uſed, not only in Medicine, but alſo in the Kitchen, &c. This grows naturally in ſome rich Meadows in *Lincolnſhire* and *Yorkſhire*, and is ſometimes found growing in the Paſtures near *London*. It is alſo cultivated for Uſe in *Eſſex*, and ſome other Countries.

This is a biennial Plant, which riſes from Seeds one Year, flowers the next, and periſhes ſoon after the Seeds are ripe. It hath a taper Root like a Parſnip, but much ſmaller, which runs deep into the Ground, and hath a ſtrong aromatick Taſte, ſending out many ſmall Fibres; from the Root ariſes one or two ſmooth, ſolid, channeled Stalks, about two Feet high, garniſhed with winged Leaves, having long naked Foot Stalks, and many ſmall Wings placed by Pairs oppoſite on the Mid-rib, which are compoſed of many narrow, little, plain Leaves, ending in ſeveral Points. The Stalks divide upward into ſeveral ſmaller Branches, each of which is terminated by an Umbel, campoſed 6 or 8 ſmall ſeparate Umbels, or Rays, which divide into ſeveral ſmall Foot Stalks, each ſuſtaining a ſingle white Flower, with 5 Heart-ſhaped Petals; the Flowers of theſe ſmall Umbels are cloſely joined together. After the Flowers are decayed, the Germen becomes an oblong channeled Fruit, compoſed of two oblong channeled Seeds, plain on one Side, but convex on the other. It flowers in *June*, and the Seeds ripen in Autumn.

The beſt Seaſon for ſowing the Seeds is in Autumn ſoon after they are ripe, when they will more certainly grow than thoſe ſown in Spring; and the Plants which riſe in Autumn, generally flower the following Seaſon, ſo that a Summer's Growth is ſaved. When the Plants come up, the Ground ſhould be hoed to deſtroy the Weeds, and where the Plants are too cloſe, they muſt be thinned as is practiſed for Carrots, leaving them 3 or 4 Inches a-part. The following Spring they will require to be twice more hoed, which will keep the Ground clean till the Seeds are ripe; then the Stalks muſt be pulled up, and tied in Bundles, ſetting them upright to dry, when the Seeds may be threſhed out.

The 2d Sort grows naturally in *Spain*; the Seeds were ſent me from the Royal Garden at *Paris*. This Plant riſes with a ſtronger Stalk than the former, which ſeldom grows more than a Foot and Half high, but is cloſely garniſhed with fine narrow Leaves, like thoſe of Dill; the Stalks divide upward into many Branches, each being terminated by looſe Umbels, of white Flowers, ſucceeded by large broad Seeds, having the ſame aromatick Flavour as the common Sort. This is a biennial Plant, and may be treated as the former.

CARYOPHYLLATA. *See* Geum.

CARYOPHYLLUS. *Lin. Gen. Plant.* 594. *Caryophyllus aromaticus. Tourn.* The Clove Tree, or All-ſpice.

The *Characters* are,

It hath a double Empalement, that of the Flower is of one Leaf, cut into four obtuſe Parts, upon which the Germen is ſituated; the Fruit hath another Empalement, which is ſmall, and ſlightly divided into 4 Parts, which are permanent. The Flower hath 4 blunt Petals, ſituated oppoſite to the Inciſures of the Empalement. It hath many Stamina, which riſe from the Sides of the Empalement, terminated by roundiſh Summits. The Germen is ſituated under the Flower, and is crowned by the ſmall Empalement, ſupporting a ſingle upright Style, crowned by an obtuſe Stigma. The Germen afterward becomes a ſoft Berry with two Cells, each containing a ſingle Kidney-ſhaped Seed.

The *Species* are,

1. CARYOPHYLLUS *foliis ovato-lanceolatis oppoſitis, floribus terminalibus, ſtaminibus corollâ longioribus.* The Clove Tree with oval Spear-ſhaped Leaves, growing oppoſite, and Flowers terminating the Stalks, whoſe Stamina are longer than the Petals. This is the *Caryophyllus aromaticus fructu oblongo. C. B. P.* 410. Aromatick Clove with an oblong Fruit.

2. CARYOPHYLLUS *foliis lanceolatis oppoſitis, floribus racemoſis terminalibus, & axillaribus.* Clove Tree with Spear-ſhaped Leaves growing oppoſite, and Flowers growing in Bunches at the Ends of the Branches, and Wings of the Leaves. *Myrtus arborea aromatica foliis laurinis. Sloan. Cat.* 161. The *Pimento*, or All-Spice.

3. CARYOPHYLLUS *foliis lanceolatis oppoſitis, floribus geminatis alaribus. Brown. Hiſt. Jam.* 248. Clove Tree with Spear-ſhaped Leaves placed oppoſite, and Flowers growing by Pairs from the Sides of the Stalks.

4. CARYOPHYLLUS *foliis ovatis obtuſis oppoſitis, floribus ſparſis alaribus.* Clove Tree with oval blunt Leaves placed oppoſite, and Flowers growing thinly from the Sides of the Branches. This is the *Myrtus cotini folio. Plum. Cat.* 19. Myrtle with a Leaf of *Venice* Sumach.

5. CARYOPHYLLUS *foliis oblongo-ovatis, emarginatis, rigidis, glabris, floribus racemoſis terminalibus.* Clove Tree with oblong oval Leaves, which are ſtiff, ſmooth, and indented at the Edges, and Flowers growing in Bunches terminating the Stalk.

The 1ſt Sort grows naturally in the *Moluccas*, and the hotteſt Parts of the World, where it riſes to the Height of a common Apple Tree; but the Trunk generally divides at about 4 or 5 Feet from the Ground, into 3 or 4 large Limbs, which grow erect, and are covered with a thin ſmooth Bark, which adheres cloſely to the Wood. Theſe Limbs divide into many ſmall Branches, which form a Sort of conical Figure; the Leaves are like thoſe of the Bay Tree, and are placed oppoſite on the Branches. The Flowers are produced in looſe Bunches at the End of the Branches; they are ſmall, white, and have a great Number of Stamina, much longer than the Petals. The Flowers are ſucceeded by oval Berries, crowned with the Empalement, divided into four Parts, which ſpread flat on the top of the Fruit, in which Form they are brought to *Europe*, for it is the young Fruit beaten from the Trees before they are half grown, which are the Cloves uſed all over *Europe*.

I have not heard of any Plants of this Kind being in the Gardens, either in *England* or *Holland*, but I choſe to mention it here, to introduce the other.

The 2d Sort grows naturally in *Jamaica*, but particularly on the north Side of that Iſland, where it is found in great Plenty, and is a conſiderable Branch of their Trade; the unripe Fruit dried, being the All-ſpice ſo well known in *Europe*. It is now cultivated with Care, in many Plantations, for the Trees will thrive upon ſhallow rocky Land, which is unfit for the Sugar Cane, ſo that great Advantage ariſes to the Planters, from Lands which would otherwiſe be of ſmall account.

This Tree grows to the Height of 30 Feet or more, with a ſtrait Trunk, covered with ſmooth brown Bark, and divides upwards into many Branches which come out by Pairs oppoſite; theſe are garniſhed with oblong Leaves, reſembling thoſe of the Bay Tree, both in Form, Colour, and Texture, and are placed by Pairs oppoſite; when theſe are bruiſed, or broken, they have a very fine aromatick Odour, like that of the Fruit. The Branches grow very regular, ſo that the Trees make a fine Appearance, and as they retain their Leaves through the Year, are worthy of being propagated for Ornament and Shade about the Habitations of the Planters. The Flowers are produced in large looſe Bunches from the Side of the Branches, toward their Ends, and each Branch is alſo terminated by a larger Bunch than the other; the Flowers are ſmall, and of an herbaceous Colour, they are male and female, upon diſtinct Trees. The male Flowers have very ſmall Petals, and a great Number of Stamina in each, which are of the ſame Colour with the Petals, and are terminated by oval bifid

Summits; the female Flowers have no Stamina, but an oval Germen, ſituated below the Flower, ſupporting a ſlender Style, with a blunt Stigma at the Top. The Germen afterward becomes a globular pulpy Berry, including two Kidney-ſhaped Seeds. The uſual Seaſon when theſe Trees flower, is in *June*, *July*, and *Auguſt*.

When the Fruit are deſigned for Uſe, they are gathered, or beaten down from the Trees, a little before they arrive to their full Size, and are ſeparated from Leaves, Stalks, or any Rubbiſh which may have accidentally mixed with them, then they are expoſed every day to the Sun, ſpread on Cloths, for ten or twelve Days to dry, but removed under Cover every Evening to ſcreen them from the Dews; when perfectly dry, they are packed up for Exportation. If the Fruit is permitted to grow to Maturity, the Pulp, which ſurrounds the Seeds, is ſo full of Moiſture, and ſo glutinous as to ſtick to the Fingers of thoſe who bruiſe them, therefore are unfit for thoſe Uſes, to which the dried Fruit are applied.

It is called by ſome *Jamaica* Pepper, but the moſt general Appellation is All-ſpice, from its Reliſh and Flavour, partaking of many Spices; and is deſervedly accounted one of the beſt, and if it was as ſcarce and difficult to procure, as the Spices of the Eaſt, would be much more ſought after and eſteemed. The *Dutch*, who have engroſſed the Spice Trade to themſelves, have been artful enough to deceive us with this of our Production, by purchaſing the dried Fruit of the All-ſpice in *England*, at a low Price, and grinding it to a Powder, then ſelling it to us at an advanced Price, for Powder of Cloves. This I have been credibly informed of, by an eminent Merchant, through whoſe Hands great Quantities of this Commodity has paſſed.

As there is ſo great an Affinity between this Tree, and the true Clove, ſo it might be worthy of Trial, if the Fruit when firſt formed, or the Flowers dried in the ſame Manner as the Eaſtern Cloves, might not anſwer the ſame Purpoſe; or, at leaſt, it would be a good Succedaneum for that Spice, and as it is the Production of our own Colonies, ſhould have proper Encouragement.

This Tree is propagated by Seeds, which in the natural Place of its Growth is conveyed, and ſown by Birds, to a great Diſtance; and, it is very probable, the Seeds paſſing through them, are rendered fitter for Vegetation, than thoſe which are immediately gathered from the Tree, for I have received great Quantities of the Berries, which were perfectly ripe and freſh, great Part of which I ſowed in different Ways, and communicated ſome of them to ſeveral curious Perſons, who did the ſame, but none of them have yet ſucceeded, and upon informing my Friend Mr. *Williams* of this, he told me that a Friend of his, whoſe Plantation was on the South Side of *Jamaica*, deſired him to ſave a large Quantity of the ripe Berries, for him to ſow on his Plantation, which he accordingly did, but his Friend forgot to ſend for them, till near two Years after, during which Time, they had lain in a large Heap, and had fermented, and on ſowing thoſe Berries, the Plants came up with the firſt Rains in great Abundance; ſo that it may be of great Service to theſe Seeds, either to paſs through animal Bodies, or to be fermented before they are ſown.

The Plants cannot be preſerved in *England*, unleſs placed in a Stove during the Winter Seaſon, but they will thrive in a moderate Degree of Warmth; they ſhould be planted in a ſoft loamy Soil, and, in Winter, muſt have but little Water; in the Summer they ſhould have a large ſhare of Air, and in *July*, if the Seaſon proves warm, they may be placed in the open Air, in a warm ſheltered Situation, but upon the Approach of cold Nights, they muſt be removed into the Stove again. The expoſing theſe Plants to the open Air, for one Month only, will be of great Service to clean their Leaves from Inſects, or Filth, which they are ſubject to contract, by remaining long in the Stove; but if the Seaſon ſhould prove very wet or cold, it will not be ſafe to truſt theſe Plants long abroad; therefore their Leaves ſhould be now and then waſhed with a Sponge to clean them, which will not only render them more ſightly, but alſo promote their Growth. I have made ſeveral Trials to propagate this Tree by Layers and Cuttings, but without Succeſs; nor have I heard of any other Perſon who has ſucceeded in the ſame Trials; which inclines me to believe, they can be no other way propagated, but by Seeds; and the rather becauſe many Trees in the ſame Country, are propagated there by Cuttings, or Branches, which, being planted in their rainy Seaſons, generally ſucceed; but I have not heard of this Tree being propagated there by any other Method than from Seeds. This Plant, being an Ever-green, makes a fine Appearance in the Stove at all Seaſons of the Year, and their Leaves having ſuch an agreeable Fragrancy when rubed, render them as worthy of a Place in the Stove, as any other exotick Plant, which is preſerved for Ornament.

The 3d Sort grows naturally in *Jamaica*, from whence I received it ſome Years paſt. This riſes with a divided Trunk, to the Height of 18 or 20 Feet, ſending out many Branches placed oppoſite and covered with a gray Bark: The Leaves come out by Pairs oppoſite, which are ſhorter, and rounder at their Points, than thoſe of the laſt Species; they are alſo ſmoother, and of a firmer Texture. The Flowers come out from the Side of the Branches, between the Leaves, upon ſlender Foot Stalks; about an Inch in Length, two generally ariſing from the ſame Point: Theſe are ſucceeded by round Berries, of a brighter Colour than thoſe of the former, having the Empalement on their Crowns. The Leaves and Fruit of this Sort have no Aromatick Flavonr, ſo are not of Uſe, but the Characters of the Flower and Fruit, are the ſame as the other Sort.

This Tree retains its Leaves all the Year, which being of a ſplendent green, make a very good Appearance, when intermixed with other exoticks in the Stove; but the Flowers being ſmall, and growing thinly on the Branches, make no great Figure, ſo it is only preſerved for the Beauty of its Foliage. It is propagated by Seeds, and treated as the other Sort.

The 4th Sort was ſent me from *Carthagena* in *New Spain*: This riſes with many irregular Stems, about 12 or 14 Feet high, which are covered with an Aſh coloured Bark, and divide into many Branches upward: Theſe are garniſhed with ſtiff oval Leaves, placed oppoſite. The Flowers are produced from the Side of the Branches, ſometimes 4, 5, or 6 Foot Stalks ariſe from the ſame Point; at other Times, they come out ſingle, or perhaps by Pairs: Theſe are white, and of the ſame Shape with thoſe of the 2d Sort, and are ſucceeded by ries which are rounder, and, for the moſt part, contain but one Kidney-ſhaped Seed.

This Sort agrees with the 2d in its general Characters, but not in the Virtues, for it hath none of the Aromatick Flavour, with which that abounds; but as it retains its Leaves through the Year, ſo may merit a Place in the Stove, better than many other Plants which are preſerved by the Curious. This is propagated by Seeds, in the ſame Way as the 2d Sort, and the Plants are treated in the ſame Manner.

The 5th Sort was ſent me from the Iſland of *Berbuda*, where it riſes to the Height of 20 Feet: The Trunk and Branches are covered with a ſmooth brown Bark. The Branches come out by Pairs oppoſite; theſe grow erect, and are garniſhed with very ſtiff, ſmooth, lucid Leaves, placed by Pairs oppoſite, and have very ſhort Foot Stalks. The Leaves vary much in their Form, ſome are oval, others oblong, and ſome indented ſo deeply at their Ends, as to be almoſt Heart-ſhaped. Their Conſiſtence is much thicker than thoſe of the common Laurel, and their Colour a ſplendent green, with one deep Mid-rib running through the Middle, and many ſmall Veins going from thence tranſverſly to their Border. The Flowers are produced in ſmall looſe Bunches, at the Extremity of the Branches, which have ſeveral narrow Leaves, intermixed with the Bunches. The Flowers are ſucceeded by Berries of the ſame Shape with thoſe of the 2d Sort, but larger.

This Tree is propagated by Seeds as the other Species; and deſerves a Place in the Stove, for the Beauty of its ever-green Leaves, which being of a thick Conſiſtence and ſhining green Colour, make a fine Appearance in the Stove, at all Seaſons of the Year; but this hath no aromatick Flavour to recommend it, as hath the 2d Sort, for which Reaſon it is ſeldom noticed. I take this to be the Bay Tree, mentioned by *Hughes*, in the Hiſtory of *Barbadoes*, which he deſcribes to have no Flavour; for I have ſeen Plants of this Sort which were brought from thence, ſo I ſuppoſe it grows naturally there.

As theſe Plants do not riſe from Seeds in *England*, the beſt way to obtain them, is to get ſome Perſon of Skill in *America*, to take up a Number of young Plants, and plant them cloſe in Boxes of Earth, ſetting them in the Shade till they have taken new Root; then remove them into an open Situation, where they may have Time to eſtabliſh their Roots before they are ſhipped for *England*; in their Paſſage they muſt be guarded from the Spray of the Sea, and ſalt Water, and ſhould have very little Water given them; for moſt of the Plants ſent to *England*, are killed in their Paſſage by having too much Wet. If theſe Directions are obſerved, the Plants may be brought in good Health, provided they come over any Time in Summer, that they may have Time to get freſh Root before the cold Seaſon begins; and when once they are well eſtabliſhed in their Roots here, they may be preſerved many Years in Vigour; but I have not ſeen any of the Plants in flower here as yet.

CASIA. *See* Oſyris.

CASSIA. *Lin. Gen. Plant.* 461. *Tourn. Inſt. R. H.* 619. *Senna ſpuria. Houſt. Mſſ. Caſſia* or Wild Senna.

The *Characters* are,

The Empalement is compoſed of five concave, coloured Leaves; the Flower hath five roundiſh concave Petals, which ſpread open; it hath ten declining Stamina, three of the lower are long, the three upper are ſhorter; the Summits of the three lower ar large, arched, beaked, and ſeparated at their Points; the three upper Stamina have very ſmall Summits; the four Side Stamina have no Beaks, but ſpread from the other. In the Center is ſituated a long taper Germen, having a ſhort Style, terminated by an obtuſe Stigma. The Germen becomes a long Pod, divided by tranſverſe Partitions, each containing one or two roundiſh Seeds, faſtened to the Margin of the upper Value.

The *Species* are,

1. CASSIA *foliolis quinquejugatis, ovato-lanceolatis, margine ſcabris, exterioribus majoribus, glandulâ baſeos petiolorum. L. S. P.* 377. *Caſſia* with Leaves compoſed of five Pair of oval Spear-ſhaped Lobes with rough Borders, the upper Lobes being the largeſt, and a ſmall Gland at the Baſe of the Foot Stalk. *Senna occidentalis, odore opii viroſo, orobi Pannonici foliis mucronatis glabris. Hort. Amſt.* Weſtern Senna ſmelling like Opium, with ſmooth pointed Leaves like the *Pannonian* bitter Vetch.

2. CASSIA *foliolis quinquejugatis ovatis glabris, exterioribus longioribus, caule fruticoſo. Caſſia* with Leaves compoſed of five Pair of ſmooth, oval Lobes, the upper being the longeſt, and a ſhrubby Stalk. This is the *Senna ſpuria Americana fruteſcens, foliis mucronatis minoribus, ſiliquis teretibus, duplici ſeminum ordine fœtis. Houſt. Mſſ.* Shrubby *American* baſtard Senna, with ſmall pointed Leaves, and taper Pods having two Rows of Seeds.

3. CASSIA *foliolis octojugatis, ovali-oblongis, interioribus minoribus, petiolis eglandulofis ſtipulis patulis. Hort. Cliff.* 158. *Caſſia* with 8 Pair of oblong, oval, little Leaves, the inner being the leaſt, Foot Stalks without Glands, and a ſpreading Stipula. This is the *Caſſia ſylveſtris fœtida, ſiliquis alatis. Plum. Cat.* 18. Wild ſtinking *Caſſia* with winged Pods.

4. CASSIA *foliolis trijugatis, oblongo ovatis æqualibus villoſis, ſiliquis articulatis, caule erecto arboreo. Caſſia* with 3 Pair of oblong, oval, hairy Leaves, which are equal, jointed Pods, and an upright woody Stem. This is the *Senna ſpuria arborea, villoſa, foliis latis mucronatis, ſiliquis articulatis. Houſt. Mſſ.* Hairy Tree, baſtard Senna with broad pointed Leaves, and jointed Pods.

5. CASSIA *foliolis trijugatis, ovato-acuminatis, villoſis, floribus ſolitariis axillaribus, ſiliquis erectis. Caſſia* with 3 Pair of Lobes in each Leaf, which are oval, pointed, and hairy, ſingle Flowers proceeding from the Sides of the Stalks, and upright Pods. This is the *Senna ſpuria herbacea orobi Pannonici foliis rotundioribus, flore parvo, ſiliquis erectis. Houſt. Mſſ.* Herbaceous baſtard Senna with rounder bitter vetch Leaves, a ſmall Flower, and upright Pods.

6. CASSIA *foliolis novemjugatis oblongis, glabris, æqualibus, floribus axillaribus. Caſſia* with ſmall Leaves, compoſed of 9 Pair of Lobes, which are oblong, ſmooth, and equal, and Flowers proceeding from the Sides of the Stalks. *Caſſia Marylandica pinnis foliorum oblongis, calyce floris reflexo. Mart. Cent. Caſſia* of *Maryland* with oblong Pinnæ, and a reflexed Flower Cup.

7. CASSIA *foliolis trijugatis obovatis glabris, interioribus rotundioribus minoribus, glandulâ interjectâ globoſâ. Hort. Cliff.* 159. *Caſſia* with 3 Pair of oval ſmooth Leaves, the inner ones being rounder and ſmaller, and a globular Gland placed between the Leaves. This is

the *Caſſia hexophylla ſiliquâ bicapſulari. Plum. Cat.* 18. Six leaved *Caſſia* with a Pod having two Cells.

8. Cassia *foliolis quinquejugatis, ovato-lanceolatis glabris, petiolis eglanduloſis. Flor. Zeyl.* 149. *Caſſia* with 5 Pair of Leaves, which are oval, Spear-ſhaped, and ſmooth, and Foot Stalks having no Glands. This is the *Caſſia fiſtula Alexandrina. C. B. P.* 405. The purging *Caſſia* of *Alexandria*, or Pudding Pipe Tree.

9. Cassia *foliolis ſexjugatis, lanceolatis, glabris, interioribus minoribus, floribus terminatricibus. Caſſia* with 6 Pair of Leaves, which are ſmooth and Spear-ſhaped, the inner ones being ſmaller, and Flowers terminating the Stalk. This is the *Caſſia Bahamenſis, pinnis foliorum mucronatis anguſtis, calyce floris non reflexo. Martyn. Cent.* 1. *p.* 21. *Bahama Caſſia* with narrow pointed Wings to the Leaves, and the Flower Cup not reflexed.

10. Cassia *foliolis bijugatis, ovato-lanceolatis, glabris, floribus terminalibus, ſiliquis longis teretibus, caule fruticoſo. Caſſia* with 2 Pair of Leaves which are oval, Spear-ſhaped, and ſmooth, Flowers terminating the Stalks, long, taper Pods, and a ſhrubby Stalk. This is the *Caſſia fruticoſa tetraphylla, ſiliquis erectis. Houſt. Mſſ.* Shrubby four leaved *Caſſia* with upright Pods.

11. Cassia *foliolis duodecemjugatis, oblongis, obtuſis, glabris, glandula nulla. Lin. Sp. Plant.* 379. *Caſſia* with 12 Pair of Leaves, which are oblong, blunt, and ſmooth, and have no Glands. This is the *Caſſia fiſtula Braſiliana. C. B. P.* 403. Purging *Caſſia* of *Braſil*, commonly called Horſe *Caſſia* in *America*.

12. Cassia *foliolis ſeptemjugatis, oblongo-ovatis, obtuſis, floribus ſpicatis axillaribus, ſiliquis recurvis. Caſſia* with 7 Pair of Leaves, which are oblong, oval and blunt, Spikes of Flowers proceeding from the Sides of the Stalks, and recurved Pods. This is the *Senna folio liguſtri. Plum. Cat.* 18. Senna with a privet Leaf.

13. Cassia *foliolis trijugatis, obtuſis, emarginatis, caulibus piloſis, floribus ſolitariis axillaribus petiolis longioribus. Caſſia* with 3 Pair of obtuſe Leaves, indented at the Top, hairy Stalks, Flowers growing ſingly from the Sides of the Stalks, and a long Foot Stalk. *Senna ſpuria fruteſcens, foliorum pinnis latioribus, caulibus piloſis, ſiliquis longiſſimis pediculis inſidentibus.* Shrubby baſtard Senna with broader Wings to the Leaves, hairy Stalks, and very long Pods ſtanding upon Foot Stalks.

14. Cassia *foliolis quadrijugatis oblongo-ovatis, caulibus procumbentibus, floribus axillaribus pedunculis bifloris. Caſſia* with 4 Pair of oval, oblong Leaves, trailing Stalks, and Flowers proceeding from the Sides of the Stalks, two growing upon each Foot Stalk. *Senna ſpuria minima, procumbens, foliorum pinnis ſubrotundis, caule pubeſcente. Houſt.* The leaſt trailing baſtard Senna with roundiſh Wings to their Leaves, and a hairy Stalk.

15. Cassia *foliolis bijugatis oblongo-ovatis, ſubtus villoſis, floribus corymboſis, caule erecto arboreo. Caſſia* with two Pair of oblong, oval Leaves, hairy on their under Side, Flowers growing in round Bunches, and an erect Tree-like Stem. This is the *Senna ſpuria tetraphylla arborea, ſiliquis compreſſis, anguſtis, longiſſimis, pendulis. Houſt. Mſſ.* Four leaved Tree baſtard Senna, with very long, narrow, flat, hanging Pods.

16. Cassia *foliolis multijugatis linearibus, floribus ſolitariis axillaribus, pedunculis longiſſimis. Caſſia* with many Pair of narrow Leaves, ſingle Flowers proceeding from the Sides of the Stalks, and very long Foot Stalks. This is the *Senna occidentalis, foliis herbæ mimoſæ, ſiliquâ ſingulari, floribus pediculis longioribus inſiſtentibus. Sloan. Hiſt. Jam.* 2. 51. Occidental baſtard Senna with Leaves like the ſenſitive Plant, ſingle Pods, and Flowers ſitting upon longer Foot Stalks.

17. Cassia *foliolis multijugatis linearibus, caulibus procumbentibus, fruteſcentibus, floribus maximis ſolitariis axillaribus, ſiliquis glabris. Caſſia* with many Pair of ſmall Leaves, which are narrow; ſhrubby trailing Stalks, large Flowers growing ſingly from the Sides of the Stalks, and ſmooth Pods. This is the *Senna ſpuria mimoſæ foliis, fruteſcens & procumbens, flore maximo, ſiliquis glabris. Houſt. Mſſ.* Shrubby, trailing, baſtard Senna, with Leaves like thoſe of the ſenſitive Plant, a very large Flower, and ſmooth Pods.

18. Cassia *foliolis trijugatis ovatis, exterioribus majoribus glandulâ ſubulatâ inter inferiora. Prod. Leyd.* 46. *Caſſia* with 3 Pair of ſmall oval Leaves, the upper being the largeſt, and an Awl-ſhaped Glandule between the lower Pair. This is the *Senna ſpuria plerumque hexaphylla ſiliquâ pentagonâ alatâ. Houſt. Mſſ.* Baſtard Senna with Leaves for the moſt Part having ſix Lobes, and a five cornered winged Pod.

19. Cassia *foliolis quinquejugatis, lanceolatis rigidis floribus racemoſis axillaribus, ſiliquis planis, caule fruticoſo. Caſſia* with 5 Pair of Spear-ſhaped ſtiff Leaves, Flowers growing in Bunches from the Sides of the Stalk, flat Pods and a ſhrubby Stalk.

20. Cassia *foliolis bijugatis ovatis, caulibus procumbentibus, floribus ſolitariis axillaribus, ſiliquis hirſutis. Caſſia* with 2 Pair of ſmall oval Leaves, trailing Stalks, ſingle Flowers proceeding from the Sides of the Stalk, and hairy Pods. This is the *Senna ſpuria tetraphylla herbacea procumbens, ſiliquis hirſutis. Houſt. Mſſ.* Trailing four leaved, herbaceous baſtard Senna with hairy Pods.

21. Cassia *foliolis multijugatis, glandulâ petioli pedicellatâ, ſtipulis enſiformibus. Hort. Upſal. Caſſia* with many Pair of Leaves, and the Gland on the Foot Stalk reſembling an Inſect, and Sword-ſhaped Stipulæ. *Chamæchriſta pavonis Americana, ſiliquâ multiplici. Breyn. Cent.* 64. Dwarf *American* Flower-fence with many Pods.

The 1ſt Sort grows naturally in the Iſlands in the *Weſt Indies*, where it is called Stinking Weed, from its unſavoury Odour. This riſes with a channeled Stalk 3 Feet high, dividing into ſeveral Branches, garniſhed with winged Leaves placed alternately; each of theſe is compoſed of 5 Pair of Lobes (or ſmall Leaves) which are oval, Spear-ſhaped, ſitting cloſe to the Mid-rib, and have rough Edges, the lower Pair of Lobes being the ſmalleſt, the others enlarge to the Top, which are the bigeſt; at the Baſe of the Foot Stalk, is produced a ſmall Protuberance which is called a Gland; this is differently ſituated in the ſeveral Species of this Genus. The Flowers come out from the Side of the Stalks, two growing upon each Foot Stalk, but the Branches are terminated by looſe Spikes of Flowers, which are compoſed of five concave yellow Petals, with ten declining Stamina, ſituated round the Germen and Style, which becomes a Sword-ſhaped flat Pod, having a Border on each Side, and is indented between each Seed.

This is a biennial Plant, which propagates by Seed in Plenty, in the Countries where it grows naturally;

but in *England*, the Seeds muſt be ſown on a hot Bed in Spring, and when the Plants are fit to remove, they ſhould be each planted in a ſeparate Pot, fill'd with light Earth, and plung'd into a moderate hot Bed, where they ſhould be ſhaded till they have taken freſh Root; after which they ſhould have freſh Air admitted to them every Day, in Proportion to the Warmth of the Seaſon, and require to be frequently watered: When the Plants have fill'd the Pots with their Roots, they ſhould be ſhifted into larger, and if too tall to remain in the hot Bed, they muſt be placed in the Stove, or a Glaſs Caſe, where they may be defended from Cold, but in warm Weather have Plenty of Air. With this Management the Plants will flower in *Auguſt*, and perfect Seeds in *October*, but may be preſerved through the Winter in a Stove, where they will continue flowering a long Time. In warm Summers the Plants may be placed in the open Air toward the latter end of *June*, where they will flower very well, but theſe will not perfect Seeds unleſs they are removed into the Stove in Autumn.

The 2d Sort was ſent me from *Jamaica* by the late Dr. *Houſtoun*, who found it growing there naturally. This riſes with a ſhrubby Stalk 5 or 6 Feet high, ſending out many Branches toward the Top, garniſhed with winged Leaves, compoſed of five Pair of ſmall oval Leaves, the upper ones being longeſt. The Flowers come out from the Sides of the Stalks, and alſo terminate the Branches in looſe Spikes; theſe are yellow, and ſhaped like thoſe of the former, but are ſmaller; the Pods are long, taper, and contain two Rows of Seeds.

This Plant may be preſerved 3 or 4 Years in the Stove, and will annually flower and perfect Seeds. It is propagated by Seeds, which ſhould be ſown on a hot Bed in Spring, and the Plants muſt be treated as the former Sort, with only this Difference, that theſe when they are too tall to remain longer under the Frames on the hot Bed, muſt be removed into the Stove, where they will often flower in Autumn or Winter; but they ſeldom perfect their Seeds till the ſecond Year.

The 3d Sort hath an herbaceous Stalk, 5 or 6 Feet high, garniſhed on every Side with long winged Leaves, compoſed of 8 or 10 Pair of large oval Lobes, each being more than 3 Inches long, and one broad; theſe are rounded at the End, where they are ſlightly indented. The Flowers are produced in looſe Spikes at the Top of the Stalk, which are large, yellow, and of the ſame Shape with thoſe of the other Species; the Pods are long, taper, and have 4 Borders or Wings running longitudinally; theſe contain a double Row of angular Seeds. The whole Plant hath a ſtrong fetid Odour.

This Sort ſeldom continues more than two Years; it muſt be raiſed from Seeds as the former Sorts, and placed in the Tan Bed in the Stove, being very tender, and ſhould have but little Water in Winter: The 2d Year the Plants will flower, but very rarely produces Seeds in *England*.

The 4th Sort was ſent me from *Campeachy*, by the late Dr. *Houſtoun*, who found it growing there in great Plenty. This riſes with a woody Stem, to the Height of 14 or 16 Feet, ſending out many lateral Branches, garniſhed with winged Leaves, compoſed of 3 Pair of oblong, oval, hairy Lobes, of equal Size; the Flowers come out in looſe Bunches at the End of the Branches, of a pale Straw Colour, and ſmall, but ſhaped like the others; the Pods are long, narrow, and jointed; the Seeds are oval and brown.

This may be propagated by Seeds, which muſt be ſown upon a hot Bed, and the Plants treated as the former Sorts, placing them in a warm Stove, where they will continue ſeveral Years, producing their Flowers in Summer, and in warm Seaſons the Seeds will ripen.

The 5th Sort is a low herbaceous Plant, ſeldom riſing a Foot high; the Stalk is ſingle, and garniſhed with winged Leaves, compoſed of 3 Pair of oval, pointed Lobes, which are hairy; the Flowers come out ſingle from the Side of the Stalks, of a pale yellow, and ſmall; theſe are ſucceeded by narrow taper Pods two Inches long, which grow upright. This Plant is annual; the Seeds muſt be ſown on a hot Bed, and the Plants treated as the firſt Sort: They flower in *July*, and ripen Seeds in Autumn. This was ſent me from *Campeachy*.

The 6th Sort grows naturally in *Maryland*, from whence I received the Seeds. It hath a perennial Root, compoſed of a great Number of black Fibres; this ſends out ſeveral upright Stalks in Spring, which riſe about two Feet high, garniſhed with winged Leaves compoſed of nine Pair of oblong ſmooth Lobes, which are equal; toward the upper Part of the Stalks the Flowers come out from the Wings of the Leaves, two or three together; but the Stalks are terminated by looſe Spikes of pale yellow Flowers, which are rarely ſucceeded by Pods in *England*. The Stalks decay in Autumn, and riſe again in Spring. The Roots continue many Years, and will live abroad in a warm Border and a dry Soil. The Seeds come up in the full Ground if ſown in *April*, and in Autumn they may be planted into the Borders where they are deſigned to remain.

The 7th Sort is an annual Plant, which riſes a Foot and half high, with an erect herbaceous Stalk, garniſhed with winged Leaves, compoſed of 3 Pair of oval Lobes; the Flowers come out ſingly from the Wings of the Leaves, they are ſmall, yellow, and ſhaped as thoſe of the other Species; theſe are ſucceeded by taper Pods, having Cells containing two Rows of Seeds. It grows naturally in *Jamaica*, and the other Sugar Iſlands.

This is propagated by Seeds ſown on a hot Bed in Spring, and the Plants treated as hath been directed for the firſt Sort. They flower in *July*, and the Seeds ripen in *October*, when the Plants will decay.

The 8th Sort is the Tree which produces the purging *Caſſia* uſed in Medicine. It grows naturally in *Alexandria*, and in both *Indies*, where it riſes to the Height of 40 or 50 Feet, with a large Trunk, dividing into many Branches, garniſhed with winged Leaves, compoſed of five Pair of Spear-ſhaped Lobes, which are ſmooth, having many tranſverſe Nerves from the Mid-rib to the Borders; the Mid-rib is very prominent on the under Side; the Flowers are produced in long Spikes at the End of the Branches, each ſtanding upon a pretty long Foot Stalk; Theſe are compoſed of five large concave Petals, of a deep yellow Colour, and are ſucceeded by round Pods, from one, to two Feet long, with a dark brown woody Shell, having a longitudinal Seam on one Side, and divided into many Cells by tranſverſe Partitions, each containing 1 or 2 oval, ſmooth, compreſſed Seeds, lodged in a ſweetiſh black Pulp, which is the Part uſed in Medicine.

This Tree is propagated by Seeds, which may be eaſily procured from the Druggiſts who import the Pods for Uſe; theſe muſt be ſown on a hot Bed in Spring, and when the Plants come up, they muſt be treated as the firſt Sort, during the firſt Summer; and in Autumn they muſt be removed into a Stove, and plunged in the Tan Bed; during the Winter they ſhould have very little Water; for as theſe Trees grow naturally in dry ſandy Land, Moiſture is a great Enemy to them, but eſpecially during that Seaſon. In Summer they ſhould have a good Share of Air in warm Weather, but they will not thrive in the open Air in this Country, at the warmeſt Time of the Year, ſo ſhould conſtantly remain in the Stove. With proper Care theſe Plants will grow 8 or 10 Feet and produce Flowers; when they make a fine Appearance.

The 9th Sort grows naturally in the *Bahama Iſlands*, from whence I received the Seeds. This is an annual Plant, which riſes with an upright Stalk, two Feet and a Half high, garniſhed with winged Leaves, compoſed of ſix Pair of Lobes, which are ſmooth, narrow, and Spear-ſhaped, ſtanding at wide Diſtances: The Flowers are collected into looſe Bunches at the Top of the Stalks, of a pale yellow, and are ſucceeded by long compreſſed Pods. It flowers in *July*, and the Seeds ripen in Autumn. This muſt be treated as the firſt Sort.

The 10th Sort was ſent me from *La Vera Cruz*, in *New Spain*, by the late Dr. *Houſtoun*. This grows upward of 20 Feet high, with ſeveral Trunks covered with brown Bark; theſe divide into many Branches upward, garniſhed with winged Leaves, compoſed of two Pair of Lobes, which, in the lower Leaves, are oval, but thoſe of the upper are five Inches long, and two and a half broad in the Middle, ſmooth, and of a light green. The Flowers are produced in looſe Spikes at the Extremity of the Branches, which are large, and of a Gold Colour; theſe are ſucceeded by taper brown Pods, about 9 Inches long, and have many tranſverſe Partitions, in which the Seeds are lodged in a thin Pulp.

This Sort is propagated by Seeds ſown on a hot Bed, and the Plants treated as the 8th Sort; for the Plants will not live in the open Ground in the warmeſt Seaſon of the Year; but if properly managed in the Stove, will produce their beautiful Flowers in 3 or 4 Years from the Seed.

The 11th Sort grows in Plenty in the Iſlands of the *Weſt-Indies*. This riſes to a great Magnitude, with a large Trunk, dividing into many Branches, garniſhed with very long winged Leaves, compoſed of 12 or 14 Pair of oblong blunt Lobes, which are ſmooth, of a light green, and placed near together. The Flowers come out in looſe Spikes at the End of the Branches, of a pale Carnation Colour, ſhaped like thoſe of the other Species; theſe are ſucceeded by large roundiſh Pods, divided by tranſverſe Partitions into many Cells, in which the Seeds are lodged, ſurrounded with a black purging Pulp. This is called Horſe *Caſſia*, becauſe it is generally given to Horſes.

It is propagated by Seeds, which ſhould be ſown, and the Plants treated as the 8th Sort, with which Management they will thrive and produce Flowers in *England*.

The 12th Sort was ſent me from the *Havannah*. This hath an herbaceous Stalk, which divides into many Parts, riſing about 3 Feet high, and is garniſhed with winged Leaves, compoſed of 7 Pair of oblong oval Lobes, which are rounded at the End. The Flowers come out from the Side of the Branches, upon very long Foot Stalks, and are diſpoſed in looſe Spikes; theſe are of a pale yellow, and are ſucceeded by recurved Pods, containing one Row of compreſſed Seeds.

This is a biennial Plant, which, if brought forward early in the Spring, will ſometimes perfect Seeds the ſame Year; but if they ſhould fail, the Plants may be kept through the Winter in a Stove, as the firſt Sort, and good Seeds may be obtained the following Seaſon.

The 13th Sort riſes with ſeveral weak ſhrubby Stalks, about two Feet high, which are cloſely garniſhed with winged Leaves, compoſed of 3 Pair of Lobes, very narrow at their Baſe, enlarging to the Top where they are blunt, and rounded with a little Indenture at the Point; theſe contract cloſely every Evening, after the Sun has left them. The Flowers come out ſingle from the Side of the Branches, ſtanding upon very long Foot Stalks; theſe are of a bright yellow, ſhaped like thoſe of the other Species, and ſucceeded by narrow flat Pods, an Inch and a Half long. This grows plentifully in *Jamaica*. It is propagated by Seeds, ſown on a hot Bed, and managed as the other tender Sorts; it will continue 2 or 3 Years, if placed in a warm Stove.

The 14th Sort ſends out from the Root, 2 or 3 ſlender Stalks, which trail on the Ground, and are garniſhed with winged Leaves, having 4 Pair of ſmall roundiſh Lobes, of a pale green; at the Inſertion of the Foot Stalks ariſe thoſe of the Flower, which is jointed, dividing into two ſhorter at the Top, ſuſtaining 2 ſmall yellow Flowers. This grows naturally in *Jamaica*, from whence the Seeds were ſent me. It is an annual Plant, whoſe Seeds muſt be ſown early in the Spring on a hot Bed, and treated like the other Kinds, but as the Branches of this grow near the Ground, the Plants may remain under a Frame all the Summer, and will flower in *July*, when, if the Seaſon is warm, they muſt have a large Share of Air, otherwiſe the Flowers will fall off, without being ſucceeded by Pods; but if rightly managed, the Seeds will ripen in Autumn.

The 15th Sort was ſent me from *La Vera Cruz*. This riſes with a ſtrong upright Trunk, to the Height of 25 or 30 Feet, dividing into many Branches, covered with an Aſh-coloured Bark, and garniſhed with winged Leaves, having long Foot Stalks, each being compoſed of 2 Pair of oblong oval Lobes, 4 Inches long, and near 2 broad, which are ſmooth, of a dark green on their upper Side, but paler underneath. The Flowers are produced ſometimes from the Side of the Stalks, where they are few and ſcattering, but the Ends of the Branches have large round Bunches of Flowers, which branch out from one Center; they are of a deep yellow, inclining to an Orange Colour. Theſe are ſucceeded by compreſſed Pods, near 9 Inches long, having a Border on each Side, and contain one Row of oval, ſmooth, compreſſed Seeds.

This Sort may be propagated by Seeds, which ſhould be ſown on a hot Bed in Spring, and when the Plants come up, treated as the 7th Sort, with which Management the Plants will thrive, and produce Flowers in a few Years.

The 16th Sort hath very ſlender trailing Stalks, about two Feet long, which are garniſhed with winged Leaves, ſitting cloſe to the Branches, and are compoſed of many narrow Pinnæ, like thoſe of the ſenſitive Plant; the Flowers come out ſingle from the Side of the Stalk, upon long ſlender Foot Stalks, which are ſmall, of a bright yellow Colour, ſhaped like thoſe of the other Species, and ſucceeded by ſhort flat Pods, containing 2 or 3 Seeds. This grows naturally in *Jamaica*. It is a biennial Plant, and is treated as the firſt Sort.

The 17th Sort was ſent me from *La Vera Cruz*, where it grows naturally. This riſes with ſeveral ſhrubby trailing Stalks, two Feet long, ſending out many Side Branches, very cloſely garniſhed with winged Leaves, compoſed of ſeveral Pair of very narrow Pinnæ, ſmaller than thoſe of the ſenſitive Plant. The Flowers are produced ſingle from the Side of the Branches, on very ſhort Foot Stalks; they are large, of a deep Orange Colour, and are ſucceeded by ſhort, narrow, ſmooth Pods.

This Plant will continue two or three Years, and produce Flowers annually, but it muſt be treated as the other tender Sorts, for it will not thrive unleſs preſerved in a warm Stove, where it will perfect Seeds the 2d Year. It flowers in *July* and *Auguſt*, and the Seeds ripen in Autumn.

The 18th Sort was ſent me from *Campeachy*. This riſes with a ſhrubby ſlender Stalk, about two Feet high, dividing upward into ſeveral Branches, thinly garniſhed with winged Leaves, compoſed of three Pair of oval Lobes, the upper being the largeſt; theſe ſtand upon long Foot Stalks, from the Baſe of which comes out the Flower, ſtanding ſingle on a ſhort Foot Stalk, of a pale yellow Colour, and is ſucceeded by a bending Pod, near four Inches long, having five longitudinal Wings, ending in a Point.

It is a biennial Plant, which if brought forward in the Spring, will flower the ſame Summer, and ſometimes perfect Seeds in Autumn; but if the Plants are placed in a warm Stove, they will live through the Winter, and the following Seaſon will flower earlier, and good Seeds may then be obtained.

The 19th Sort riſes with a ſhrubby Stalk to the Height of 10 or 12 Feet, dividing upward into many Branches, garniſhed with winged Leaves, compoſed of 5 Pair of ſtiff Spear-ſhaped Lobes; the Flowers come out from the Side of the Branches, on long branching Foot Stalks, collected into large looſe Spikes; theſe are of a deep Orange Colour, large, and ſhaped like thoſe of the other Species, and are ſucceeded by flat brown Pods, about four Inches long, containing one Row of flat ſmooth oval Seeds. This Sort was ſent me from *Carthagena*; it is propagated by Seeds as the other Species, and requires a warm Stove, where it will thrive and produce Flowers annually.

The 20th Sort was ſent me from *La Vera Cruz*. This hath ſeveral trailing herbaceous Stalks, about two Feet long, which are garniſhed with winged Leaves, having long Foot Stalks, and are placed at a conſiderable Diſtance from each other; they have 2 Pair of ſmooth oval Lobes. The Flowers come out ſingle from the Side of the Branches, of a pale yellow Colour, and are ſucceeded by ſhort, flat, hairy Pods, containing one Row of flat Seeds. This is an annual Plant, which muſt be raiſed on a hot Bed early in Spring, and treated as the other annual Sorts before-mentioned. It flowers in *July*, and the Seeds ripen in Autumn.

The 21ſt Sort grows common in all the Iſlands of the *Weſt-Indies*. This riſes with a ſlender Stalk, about two Feet high, ſending out a few Side Branches upward, garniſhed with winged Leaves, compoſed of many Pairs of narrow Pinnæ, like thoſe of the ſenſitive Plant. The Flowers come out upon ſhort Foot Stalks from the Side of the Branches, each Foot Stalk ſuſtaining 2 or 3 yellow Flowers, of the ſame Form with the other Species of this Genus; theſe are ſucceeded by ſhort flat Pods, containing 3 or 4 flat Seeds in each.

This is an annual Plant, and is treated as the other Sorts; but as the Stalks grow upright, they will be too tall to remain under a Frame all the Summer; therefore when the Plants are advanced near the Glaſſes, they ſhould be removed into the Stove, or a Glaſs Caſe, where they may have Room to grow, and be ſcreened from the Cold, but in warm Weather ſhould have a good Share of Air admitted to them; with this Management they will flower in *July*, and perfect Seeds in Autumn.

Theſe Plants being preſerved in the Gardens of the curious, I have enumerated them here, though ſeveral of them have not much Beauty to recommend them, but are chiefly kept for Variety. The moſt beautiful are the 4th, the 8th, 10th, 11th, 15th, and 19th Sorts; theſe all make a good Appearance in the Stove, eſpecially when they are in flower; and as they retain their Leaves all the Year, make an agreeable Variety in the Winter Seaſon, when intermixed with other Plants from the ſame Countries. All the Species of this Genus contract their Leaves every Evening, as the Sun declines, and open them again with the riſing Sun in the Morning, which is alſo common to many other Plants, ſome of which turn their upper Surface outward, but all thoſe of this Genus turn their under Surface outward, the upper being very cloſely folded together. Theſe are what *Linnæus* titles ſleeping Plants. It muſt alſo be obſerved that moſt of thoſe Plants, whoſe under Surface is turned outward, are ſuch as grow upon dry ſandy Land, where their Roots do not find a Supply of Moiſture, ſo that the lower Surface of their Leaves being generally covered with a ſhort ſoft Down, or Hairs, detain the nightly Dews, which are inhaled by the Leaves, and furniſh Part of their Nouriſhment; whereas the other, whoſe upper Surface is turned outward, do not ſtand in need of this Supply; ſo being ſmooth, the Moiſture is caſt off, and not imbibed by them.

CASSIDA [an Helmet], Scull Cap. *See* Scutellaria.

CASSINE. *Lin. Gen. Plant.* 333. The Caſſioberry Buſh, and *South-Sea* Thea.

The *Characters* are,

It hath a ſmall permanent Empalement, divided into five Parts; the Flower hath but one Petal, cut into five obtuſe Segments, which ſpread open; it hath five Stamina, which ſpread from each other, and are terminated by ſingle Summits; it hath a conical Germen, without a Style, ſupporting three reflexed Stigma. The Germen becomes an umbilicated Berry with three Cells, each containing a ſingle Seed.

The *Species* are,

1. Cassine *foliis ovato-lanceolatis, ſerratis, oppoſitis, floribus corymboſis axillaribus. Fig. Pl. Plat.* 83. *f.* 1. *Caſſine* with oval Spear-ſhaped Leaves placed oppoſite, and Flowers growing in round Bunches from the Sides of the Branches. This is the *Caſſine vera perquam ſimilis, arbuſcula, Phillyreæ foliis antagoniſtis, ex Provinciâ Carolinienſi. Pluk. Mant.* 40. The Caſſioberry Buſh.

2. Cassine *foliis lanceolatis alternis ſempervirentibus, floribus axillaribus. Fig. Pl. Plat.* 83. *f.* 2. *Caſſine* with ever green Spear-ſhaped Leaves, placed alternately, and Flowers proceeding from the Sides of the Branches. This is the *Caſſine vera Floridanorum, arbuſculâ bacciferâ, Alaterni ferme facie, foliis alternatim ſitis tetrapyrene. Pluk.* Ever-green *Caſſine*, Yappon, or *South-Sea* Thea.

The 1ſt Sort riſes with 2 or 3 Stems, which ſend out many Side Branches their whole Length, and become buſhy; theſe ſeldom riſe more than 8 or 9 Feet high. The Branches are garniſhed with oval Spear-ſhaped Leaves, ſawed on their Edges, which grow oppoſite. Toward the upper Part of the Branches, the Flowers come out from the Sides, growing in roundiſh Bunches; theſe are white, and are divided into five Parts almoſt to the Bottom; in their Center is placed the Germen, attended by five Stamina, which ſpread open, near as much as the Segments of the Petal. After the Flower is paſt, the Germen ſwells to a round Berry, having three Cells, each containing a ſingle Seed.

The 1ſt Sort is now become common in the Nurſeries near *London*, where it is propagated by laying down the Branches, which afford Shoots in Plenty for that Purpoſe, ſo as to become very buſhy and thick, if they are not cnt off; Numbers of theſe Shrubs produce Flowers in *England* every Year, but none of them ripen Seeds.

The Leaves of this Plant are extremely bitter, ſo that if a ſingle one is chewed, the Bitterneſs cannot be gotten rid of in a long Time. They continue green very late in Autumn, if the Seaſon proves mild, and come out early in Spring, but are frequently pinched by the Froſt in *March*, when they appear ſo ſoon. This Shrub flowers in *July* and *Auguſt*, it grows naturally in *Virginia* and *Carolina*.

It loves a light Soil, not too dry, and warm Situation; for, in expoſed Places, the young Shoots are frequently killed in Winter, whereby the Shrubs are rendered unſightly, but where they are near the Shelter of Trees, or Walls, they are very rarely hurt.

The 2d Sort grows naturally in *Carolina*, and ſome warm Parts of *Virginia*, but chiefly near the Sea; this, in the natural Places of its Growth, riſes to the Height of 10 or 12 Feet, ſending out Branches from the Ground upward, which form themſelves into a Sort of Pyramid, and garniſhed with Spear-ſhaped Leaves, placed alternately; theſe are in Texture and Colour like thoſe of *Alaternus*, and continue green through the Year. The Flowers are produced in cloſe Whorls round the Branches, at the Foot Stalks of the Leaves; they are white, and of the ſame Shape as the former, theſe are ſucceeded by red Berries, like thoſe of the former Sort.

This Plant was many Years preſerved in ſeveral curious Gardens near *London*, till the ſevere Winter in 1739, when moſt of them were deſtroyed, ſo that there was ſcarce any left; but of late many of the young Plants have been raiſed from Seeds, which came from *Carolina*, ſome of which have been growing in the full Ground, 4 or 5 Years, and have reſiſted the Cold of the Winters, without Covering, but I fear they will ſuffer in very cold Seaſons, where they are not very well ſheltered. If this Plant can be brought to thrive well in *England*, and to endure the Winter in the open Air; it will be a fine Plant, to make a Variety in Plantations of ever-green Trees. The Leaves of this Sort are not ſo bitter as thoſe of the firſt, eſpecially when green, therefore are prefered to them for making the Thea; but an Infuſion of the Leaves of the firſt, has been taken for a Loſs of Appetite by ſome Perſons with good Succeſs; but it muſt not be too ſtrong, leſt it ſhould prove emetic or cathartic.

The Inhabitants of *North Carolina* and *Virginia*, where this Shrub grows in Plenty, give it the Title of Yapon, which I ſuppoſe to be the *Indian* Name; being much eſteemed by the *Indians* for its medicinal Virtues; this grows to the Height of 10 or 12 Feet; the Leaves are about the Size and Shape of thoſe of the ſmall leaved *Alaternus*, but ſomewhat ſhorter, and a little broader at the Baſe; they are a little notched about the Edges, of a thick Subſtance, and deep green Colour; the Flowers are produced at the Joints near the Foot Stalk of the Leaves; but the Caſſioberry Buſh produces its Flowers in Umbels at the Extremity of the Shoots; the Berries of this Yapon continue upon the Plants moſt Part of the Winter, and, being of a bright red Colour, intermixed with the green Leaves, make a fine Appearance at that Seaſon. From theſe Berries continuing ſo long untouched by the Birds, we may reaſonably conclude, they have ſome venomous Quality, becauſe few of the Fruits or Berries, which are wholeſome, eſcape the Birds, in a Country where there are ſuch Flocks of various Kinds.

Theſe Trees are propagated by ſowing their Seeds (which are obtained from *Carolina*, where they grow in great Plenty near the Sea Coaſts); they ſhould be ſown in Pots filled with light ſandy Earth, and plunged into a gentle hot Bed, obſerving to water them frequently, until you ſee the Plants appear, which is ſometimes in five or ſix Weeks time, and at other Times they will remain in the Gronnd until the ſecond Year; therefore, if the Plants ſhould not come up in two Months, you ſhould remove the Pots into a ſhady Situation, to remain till *October*, being careful to keep them clean from Weeds, and now and then in dry Weather giving them a little Water; then remove theſe Pots into Shelter during the Winter Seaſon; and in the *March* following put them upon a freſh hot Bed, which will forward their Vegetation.

When the Plants come up, they ſhould, by Degrees, be expoſed to the open Air, to inure them to our Climate; yet they ſhould not be expoſed to the open Sun at firſt, but rather let them have the Morning Sun only, placing them for ſome Time where they may be ſheltered from the cold Winds; they ſhould enjoy a Shelter during the 2 or 3 firſt Winters; after which the Caſſioberry Buſh may be planted abroad; but the *South-Sea* Thea ſhould be kept in Pots a Year or two longer, being ſlower of Growth, and will therefore not have Strength enough to reſiſt the Cold when young.

The *Paraguay*, or *South-Sea* Thea, is accounted by the *Indians* very wholeſome, and (as I have been informed by ſeveral worthy Perſons, who reſided for ſeveral Years in *Carolina*) is the only Phyſick the *Indians* uſe, and for which at certain Times of the Year, they come in Droves, ſome hundred Miles diſtant, for the Leaves of this Tree (it not being known to grow at any conſiderable Diſtance from the Sea); where their uſual Cuſtom is, to make a Fire upon the Ground, and, putting a great Kettle of Water thereon, they throw into it a large Quantity of theſe Leaves, and immediately ſet themſelves round the Fire, and, with a Bowl that holds about a Pint, they begin drinking large Draughts, which in a very ſhort Time vomits them ſeverely; thus they continue drinking and vomiting, for the Space of two or three Days, until they have ſufficiently cleanſed themſelves; then they gather every one a Bundle of the Tree to carry away with them, and retire to their Habitations. But theſe Gentlemen obſerved ſomething very extraordinary in the Operation of this Plant, which was, that in vomiting it gave them no Uneaſineſs, or Pain, but came away in a full Stream from their Mouths without declining their Heads, or the leaſt Reaching.

This Plant is ſuppoſed to be the ſame as that which grows in *Paraguay*, where the Jeſuits of that Country make a great Revenue of the Leaves, which they export to other Countries, where it is infuſed and drank like Tea; indeed, there are ſome who doubt its being the ſame; which will be difficult to determine, ſince there is little Converſe between the Inhabitants of *Paraguay*, and thoſe in *Europe*; and all the Leaves of that Tea, which have been brought to *Europe*, have been generally ſo broken and defaced, as to render it almoſt impoſſible to know their true Figure; however, from ſome of the faireſt Leaves, which were picked out of the *Paraguay* Tea by a Perſon of Skill, who compared them with thoſe of the Yapon, he had great Reaſon to believe they were the ſame; and as the Virtues attributed to the Yapon are nearly, if not abſolutely, the ſame with thoſe of the *Paraguay*, the *Indians* of theſe Northern Parts of *America* making the ſame Uſe of it as the Inhabitants of the South Parts of *America* do, *viz.* to reſtore loſt Appetite, and they ſay it gives them Courage and Agility, for which Purpoſes it has been in Uſe Time out of Mind; we may alſo obſerve, that the Place of its Growth in the North, is the ſame Latitude as *Paraguay* is South.

CASTANEA. *Tourn. Inſt. Raij. Meth. Plant.* 140. *Fagus. Lin. Gen. Plant.* 951. The Cheſtnut Tree, in *French Chateignier* or *Maronnier.*

The *Characters* are,

It hath male and female Flowers on the ſame Tree, ſometimes at ſeparate Diſtances, and at other Times near each other. The male Flowers are fixed to a long String, forming a ſort of Katkin; theſe have each an Empalement of one Leaf, cut into five Parts: they have no Petals, but include about ten or twelve briſtly Stamina, terminated by oblong Summits. The female Flowers have alſo an Empalement of one Leaf, divided into four Parts, having no Petals but a Germen fixed to the Empalement, ſupports three Styles crowned by a reflexed Stigma. The Germen, which is ſituated at the Baſe of the Empalement, becomes a roundiſh Fruit armed with ſoft Spines, including one or more Nuts.

The *Species* are,

1. Castanea *foliis lanceolatis acuminato-ſerratis, ſubtus nudis.* Cheſtnut with Spear-ſhaped Leaves ſharply ſawed, and naked on their under Side. This is the *Caſtanea ſativa. C. B. F.* 418. The manured Cheſtnut.

2. Castanea *foliis lanceolato-ovatis acutè ſerratis, ſubtus tomentoſis, amentis filiformibus nodoſis.* Cheſtnut with oval Spear-ſhaped Leaves ſharply ſawed, which are woolly on their under Side, and a ſlender knotted Katkin. This is the *Caſtanea pumila Virginina, racemoſa fructu parvo in ſingulis capſulis echinato unico. Pluk. Alm.* 90. The Chinquapin.

3. Castanea *foliis oblongo-ovatis, ſerratis, fructu rotundo maximo echinato.* Cheſtnut with oblong, oval ſawed Leaves, and a very large, round, prickly Fruit. This is the *Sloanea amplis Caſtaneæ foliis, fructu echinato. Plum. Nov. Gen.* 49. *Sloanea* with large Cheſtnut Leaves, and a prickly Fruit.

The Cheſtnut is a Tree which deſerves our Care, as much as any propagated in this Country, either for Uſe or Beauty, being one of the beſt Sorts of Timber, and affording a goodly Shade. It will grow to a very great Size, and ſpread its Branches finely on every Side where it has Room. The Leaves are large, of a lucid green, and continue late in Autumn; nor are they ſo liable to be eaten by Inſects, as are thoſe of the Oak, which renders them very unſightly great Part of Summer; I have never obſerved this to be the Caſe with the Cheſtnut, which makes them more valuable for Parks and Plantations for Ornament; and there is no better Food for Deer, and many other Animals, than their Nuts, which moſt of them prefer to Acorns; but yet, there ſhould not be many of theſe Trees planted too near the Habitation; becauſe, when they are in flower, they emit a very diſagreeable Odour, which is offenſive to moſt People.

Several Varieties of this Tree have accidently ariſen from Seeds, which have been ſuppoſed diſtinct Species; but the Differences are only in the Size of their Fruit and Leaves, which have been altered, and improved by Culture; ſo that the wild and manured Cheſtnut, are undoubtedly the ſame; for I have frequently found, that Nuts taken from the ſame Tree, and cultivated in the ſame Soil, with equal Care, have produced Trees with very ſmall Fruit; and among them have been others, whoſe Fruit have been as large as thoſe of the Parent Tree; therefore they can be only eſteemed as Varieties. But in many Countries, where the Trees are cultivated for their Fruit, the People graft the largeſt and faireſt Fruit, upon Stocks of Cheſtnut raiſed from the Nut; and theſe grafted Trees are by the *French* called *Maronnier*, but theſe grafted Trees are unfit for Timber.

There is alſo a Cheſtnut with variegated Leaves, which is propagated in the Nurſeries by way of Curioſity: This is done by budding and inarching it upon common Cheſtnut Stocks, in the ſame Manner as other Fruit Trees; but theſe variegated Trees and Plants, are not ſo much regarded now, as they were ſome Years paſt.

The Dwarf branching Cheſtnut mentioned in the Books, I take to be only a Variety of the Common; for Dr. *Boerhaave* ſhewed me ſome young Trees in his Garden near *Leyden*, which he raiſed from Nuts ſent him by *Micheli* from *Florence*, as the true Fruit of the Dwarf

Cheſtnut, but there appeared no Difference between thoſe, and ſome others raiſed from Nuts of the large Sort.

The 3d Sort grows in *South Carolina*, from whence ſome of the Fruit with their outer Covers, were ſent to the Duke of *Bedford*: Theſe were as large and round as a Tennis Ball, and armed all over with ſtrong Spines like a Hedge-hog: Theſe *Capſulæ* were divided regularly in four Cells, each containing one ſmall Cheſtnut. I compared theſe with Father *Plumier*'s Deſcription and Figure, which he exhibited under the Title of *Sloanea*, and found them to agree exactly; looking through the Box in which theſe were ſent, I found ſome of the Leaves of the Tree, which alſo tallied with his Deſcription, and confirmed my former Opinion; therefore, as I could ſee no other Difference between the Fruit of this, and the common Cheſtnut, but its having four regular Cells, divided by Partitions, whereas thoſe of the Cheſtnut have but 2 or 3; I have joined them together, being perſuaded, that farther Obſervations, will juſtify my ſo doing.

It does not appear where *Plumier* found this Tree growing naturally, though it is probable, it might be in *Louiſiana*; for I think it could not be in either of the *Weſt India* Iſlands, where the Heat is two great, for this Tree to thrive; though this is tender while young, for 2 or 3 young Plants which were raiſed in *England*, did not ſurvive the 3d Winter.

The 1ſt of theſe Trees was formerly in greater Plenty than at preſent, as may be proved by the old Buildings in *London*, which were for the moſt Part of this Timber; and in a Deſcription of *London*, written by *Fitz-Stephens*, in *Henry* the Second's Time, he ſpeaks of a very noble Foreſt, which grew on the North Part of it: *Proxime* (ſays he) *patet foreſta ingens, ſaltus numeroſi ferarum, latebræ cervorum, damarum, aprorum, & taurorum ſylveſtrium, &c.* And there are ſome Remains of old decayed Cheſtnuts, in the old Woods and Chaces not far diſtant from *London*; which plainly proves, that this Tree is not ſo great a Stranger to our Climate, as many People believe, and may be cultivated in *England*, to afford an equal Profit with any of the larger Timber Trees, ſince the Wood is equal in Value to the beſt Oak, and, for many Purpoſes, far exceeding it; particularly for making Veſſels for all Kinds of Liquor, it having a Property (when once thoroughly ſeaſoned) of maintaining its Bulk conſtantly and is not ſubject to ſhrink or ſwell, as other Timber is too apt to do; and I am certainly informed, that all the large Caſks, Tuns, &c. for Wines in *Italy*, are made of this Timber; and it is for that, and many more Purpoſes, in greater Eſteem amongſt the *Italians*, than any other Timber whatever. It is alſo very valuable for Pipes to convey Water under Ground, enduring longer than the Elm, or any other Wood. In *Italy* it is planted for Coppice Wood, and is very much cultivated in Stools, to make Stakes for Vines; which, being ſtuck into the Ground, will endure ſeven Years, which is longer than any other Stakes will do, by near half the Time. The Uſefulneſs of the Timber, together with the Beauty of the Tree, renders it well worth propagating, eſpecially in Avenues or ſmaller Plantations near a Dwelling Houſe.

Theſe Trees are propagated by planting the Nuts in *February*, in Beds of freſh undunged Earth. The beſt Nuts for ſowing, are ſuch as are brought from *Portugal* and *Spain*, and ſold in Winter for Eating, provided they are not Kiln-dried, which is generally the Caſe of thoſe brought from Abroad, which is done to prevent their ſprouting in their Paſſage; therefore, if they cannot be procured freſh from the Tree, it will be much better to uſe thoſe of the Growth of *England*, which are full as good to ſow for Timber or Beauty, as any of the foreign Nuts, though their Fruit is much ſmaller: Theſe ſhould be preſerved, until the Seaſon for ſowing, in Sand, where Mice, or other Vermin cannot come to them, otherwiſe they will ſoon deſtroy them: Before you ſet them, it will be proper to put them into Water, to try their Goodneſs, which is known by their Weight; thoſe that ſwim on the Surface of the Water ſhould be rejected, as good for nothing; but ſuch as ſink to the Bottom, you may be ſure are good.

In ſetting theſe Seeds or Nuts, the beſt Way is, to make a Drill with a Hoe (as is commonly practiſed in ſetting Kidney Beans) about 4 Inches deep, in which you ſhould place the Nuts, at about 4 Inches Diſtance, with their Eye uppermoſt; then draw the Earth over them with a Rake, and make a ſecond Drill at about a Foot Diſtance from the former, proceeding as before, allowing 3 or 4 Rows in a Bed, with an Alley between, 3 Feet broad for a Conveniency of clearing the Beds, &c. When your Plantation is finiſhed, you muſt be careful that it is not deſtroyed by Mice, or other Vermin; which is very often the Caſe, if they are not prevented by Traps, or other Means.

In *April* theſe Nuts will appear above Ground; you muſt therefore obſerve to keep them clear from Weeds, eſpecially while young: In theſe Beds they may remain for 2 Years, when you ſhould remove them into a Nurſery, at a wider Diſtance. The beſt Seaſon for tranſplanting theſe Trees, is either in *October* or the latter End of *February*; but *October* is the beſt Seaſon: The Diſtance theſe ſhould have in the Nurſery, is three Feet Row from Row, and one Foot in the Rows: You muſt be careful in tranſplanting, to take them up without injuring their Roots, nor ſhould they remain long out of the Ground; but if theſe Trees have a downright Tap Root, it ſhould be cut off, eſpecially if they are intended to be removed again; this will occaſion their putting out lateral Roots, and render them leſs ſubject to miſcarry, when they are removed for good.

The Time generally allowed in this Nurſery, is 3 or 4 Years, according to their Growth; but the younger they are tranſplanted, the better they will ſucceed; during which, you ſhould be careful to keep them clear from Weeds, obſerving alſo to prune off lateral Branches, which would retard their upright Growth; and where you find any that are diſpoſed to grow crooked, either by their upper Bud being hurt, or from any other Accident, you may the Year after planting, in *March*, cut them down to the lowermoſt Eye next the Surface of the Ground, which will cauſe them to make one ſtrong upright Shoot, and may be afterwards trained into good ſtrait Trees: But this ſhould not be practiſed, unleſs the Plants have abſolutely loſt their leading Shoot; for although the Stems of the Trees ſhould be very crooked (as is generally the Caſe with theſe Trees when young); yet when they are tranſplanted out, and have Room to grow, as they increaſe in Bulk, they will grow more upright, and their Stems will become ſtrait, as I have frequently obſerved, where there have been great Plantations.

But in doing this, you muſt be careful not to diſturb their Roots, which, perhaps might deſtroy them. Theſe Trees require no other Manure than their own Leaves. which ſhould be ſuffered to rot upon the Ground; and in the Spring of the Year, the Ground ſhould have a ſlight Digging, when theſe ſhould be buried between their Roots, but not too cloſe to the Trees, which might be injurious to their young Fibres.

After remaining three or four Years in the Nurſery, they will be fit for tranſplanting, either in Rows for Avenues to a Houſe, or in Quarters for Wilderneſs Plantations; but if you intend them for Timber, it is by much the better Method to ſow them in Furrows (as is practiſed for Oaks, *&c.*) and let them remain unremoved; for theſe Trees are apt to have a downright Tap Root, which, being Hurt by tranſplanting, is often a Check to their upright Growth, and cauſes them to Shoot out lateral Branches, as the Oak, Walnut, *&c.*

Therefore, where any of theſe Trees are planted for Timber, they ſhould remain unremoved: But where the Fruit of them is more ſought after, then it is certainly the better Way to tranſplant them; for as tranſplanting is a Check to the luxuriant Growth of Trees, ſo it is a Promoter of their Fructification, as may be evinced by obſerving low ſhrubby Oaks, Walnuts, *&c.* which generally have a greater Plenty of Fruit, than any of the larger and more vigorous Trees; and the Fruit of ſuch Trees is much ſuperior in Taſte, though the Seeds of vigorous Trees are vaſtly preferable for Plantations of Timber; for it is a conſtant Obſervation, that, by ſaving Seeds from Dwarf Trees or Plants, from Time to Time, they may be rendered much lower in their Growth, than their natural Size; but where the Fruit is moſt deſired, then they ſhould be taken from ſuch Trees as produce the largeſt and ſweeteſt Nuts, which are commonly found upon ſuch Trees as ſpread the moſt, and have horizontal Roots; for the weaker Trees being leſs capable to furniſh a Supply of Nouriſhment, and having a greater Quantity of Fruit upon them, to which this muſt be diſtributed, together with their Roots lying near the Surface of the Ground (by which means the Juices are better prepared by Sun, Air, *&c.* before it enters their Veſſels), it is certain their Juices are better digeſted, and their Fruits better matured, than thoſe can poſſibly be, which grow upon ſtrong vigorous Trees, which have long Tap Roots running ſeveral Feet deep into the Earth, and conſequently take in vaſt Quantities of crude unprepared Juice, which is buoyed up to the extreme Parts of the Tree; and theſe ſeldom having many lateral Branches, to digeſt and prepare their Juice, by perſpiring or throwing off the crude Part, before it enters the Fruits.

And this, I dare ſay, univerſally holds good in all Sorts of Fruit Trees, and is often the Occaſion of the good and bad Qualities of the ſame Sorts of Fruits growing on the ſame Soil.

What has been related about grafting this Tree into the Walnut, to promote their bearing, or render their Fruit fairer; or inoculating Cherries into the Cheſnut, for later Fruit, is very whimſical and ſilly; ſince neither the Cheſnut nor Walnut will receive its own Kind any other way than by inoculating or inarching; and it is the latter only, by which the Walnut can be propagated; nor was it ever known, that any two Trees of a different Genus would take upon each other, ſo as to produce either a good Tree or Fruit; therefore we may juſtly explode all thoſe different Graftings of various Trees upon each other, ſo much talked of by the Ancients; at leaſt we may ſuppoſe theſe Trees are not known by the ſame Names now, that they are mentioned by in their Writings; for I have made many Trials upon them, which, although performed with great Care, and in different Seaſons, yet ſcarcely one of them ſucceeded. But to return:

If you deſign a large Plantation of theſe Trees for Timber, after having two or three Times ploughed the Ground, the better to deſtroy the Roots of Weeds, you ſhould make your Furrows about ſix Feet Diſtance from each other, in which you ſhould lay the Nuts about ten Inches apart, covering them with Earth about three Inches deep; and, when they come up, you muſt carefully clear them from Weeds: The Diſtance allowed between each Row, is for the Uſe of the Horſe Hoeing Plough, which will diſpatch a great deal of this Work in a ſhort Time, but it ſhould be performed with great Care, ſo as not to injure the young Plants; therefore the Middle of the Spaces only ſhould be cleaned with this Inſtrument, and a Hand Hoe muſt be uſed to clean between the Plants in the Rows, and alſo on each Side, where it will be unſafe for the Plough to be drawn; and in Hand hoeing, there muſt be great Care taken, not to cut the tender Rind of the Plants. If the following Spring, the Spaces are carefully ſtired with the Plough, it will not only make the Ground clean, but alſo looſen it, and the Sun and Moiſture will more eaſily penetrate the ſame, which will greatly promote the Growth of the Plants; the oftener theſe Ploughings are repeated, the cleaner will be the Ground, and the greater will be the Progreſs of the Plants, which cannot be kept too clean while they are young: When theſe have remained 3 or 4 Years (if the Nuts ſucceeded well), you will have many of theſe Trees to remove; which ſhould be done at the Seaſons before directed, leaving the Trees 3 Feet Diſtance in the Rows; at which Diſtance they may remain for 3 or 4 Years more, when you ſhould remove every other Tree, to make Room for the remaining, which will reduce the whole Plantation to 6 Feet ſquare; which will be Diſtance enough for them to remain in, until they are large enough for Poles, when you may cut down every other of theſe Trees (making Choice of the leaſt promiſing) within a Foot of the Ground, in order to make Stools for Poles, which, in 8 or 10 Years Time, will be ſtrong enough to lop for Hoops, Hop Poles, *&c.* for which Purpoſes they are preferable to moſt other Trees; ſo that every tenth Year, here will be a freſh Crop, which will pay the Rent of the Ground, and all other Charges, and, at the ſame Time, a full Crop of growing Timber left upon the Ground: But as the large Trees increaſe in Bulk, their Diſtance of 12 Feet ſquare will be too ſmall, therefore, when they have grown to a Size for ſmall Boards, you ſhould fell every other Tree, which will reduce them to 24 Feet ſquare, which is a proper Diſtance for them remain for good; this will give Air to the Underwood which, by this Time, would be too much over-hung by the Cloſeneſs of the large Trees); by which Means that will be greatly encouraged, and the ſmall Timber felled, will pay ſufficient Intereſt for the Money at firſt laid out in Planting, &c. with the Principal alſo; ſo that all the remaining Trees are clear Profit, for the Under-wood ſtill continuing, will pay the Rent of the Ground, and all other Expences; and what a fine Eſtate there will be, for a ſucceeding Generation, in about fourſcore Years, I leave every one to judge.

The Chinquapin, or Dwarf *Virginian* Cheſtnut, is at preſent very rare in *England*; it is very common in the Woods of *America*, where it ſeldom grows above 12 or 14 Feet high, and produces great Plenty of Nuts, which are, for the moſt Part ſingle, in each outer Coat or Capſule. This Tree is very hardy, and will reſiſt the ſevereſt of our Winters in the open Ground; but is very apt to decay in Summer, eſpecially if planted in very dry Ground. The Nuts, if brought from *America*, ſhould be put in Sand as ſoon as they are ripe, and ſent to *England* immediately; otherwiſe they loſe their growing Quality, which is the Reaſon this Tree is at preſent ſo ſcarce with us; for not one Seed in five Hundred ſent over ever grew, which was owing to the Neglect of putting them up in this Manner: Indeed, moſt of the Nuts which have been brought over, have been Kiln-dried, to preſerve them from ſprouting, which infallibly deſtroys the Germen: When the Nuts arrive, they ſhould be put into the Ground as ſoon as poſſible; and if the Winter ſhould prove ſevere, it will be proper to cover the Ground with Leaves, Tan, or Peaſe Haulm, to prevent the Froſt from penetrating, ſo as to deſtroy the Nuts: This Sort of Cheſtnut delights in a moiſt Soil, but if the Wet continues long on the Ground in Winter, it is apt to kill the Trees. This Tree will take by inarching upon the common Sort; but the Trees ſo propagated, ſeldom ſucceed well.

I have ſeen a Specimen, and ſome Nuts of a Dwarf Cheſtnut, brought from *North America*, which differed from all the other Sorts; and have been informed, that the *French* have raiſed Plants of this Kind, from the Nuts brought from *Canada*, but as I have not ſeen any of the Plants raiſed in *England*, can give no farther Account of it, than that ſome late Writers have ſuppoſed it to be the Dwarf branching Kind beforementioned.

CASTANEA EQUINA. *See* Eſculus.

CASTOREA. *See* Durantia.

CATANANCHE. *Lin. Gen. Plant.* 824. *Catanance. Tourn. Inſt. Candia* Lion's Foot.

The *Characters* are,

The Flower is compoſed of many hermaphrodite Florets, thoſe on the Border being longer than thoſe in the Center; theſe are included in one common ſcaly Empalement, which is permanent and elegant. The Florets are of one Leaf, Tongue-ſhaped, indented in five Parts, and are longer than the Empalement; theſe have each five ſhort hairy Stamina, terminated by cylindrical Summits. The Germen is ſituated below the Flower, ſupporting a ſlender Style the Length of the Stamina, crowned with a bifid Stigma which is reflexed. The Germen becomes a ſingle oval Seed, which is compreſſed and crowned with Briſtles, incloſed in the Empalement.

The *Species* are,

1. CATANANCHE *ſquamis calycinis inferioribus ovatis. Hort. Cliff.* 390. *Catananche* whoſe under Scales of the Empalement are oval. *Catanance quorundam.*

2. CATANANCHE *ſquamis calycinis inferioribus lanceolatis. Hort. Cliff.* 390. *Catananche* whoſe under Scales of the Empalement are Spear-ſhaped. This is the *Catanance flore luteo, latiore folio. Tourn. Inſt. R. H.* 478. *Catanance* with a yellow Flower and a broader Leaf.

Both theſe Plants grow naturally in the South of *France*, in *Spain*, *Italy*, and *Candia*, from whence it had the Title of *Candia* Lions Foot.

The 1ſt Sort ſends out many long, narrow, hairy Leaves, which are jagged on their Edges, like thoſe of Buckſhorn Plaintain, but the Leaves are broader, the Jags are deeper, and at greater Diſtances; theſe lie flat on the Ground, turning their Points upwards, which are very narrow. Between the Leaves come out the Flower Stalks, in Number proportionable to the Size of the Plant; for from an old thriving Root, there is frequently 8 or 10, and young Plants do not ſend out more than 2 or 3. Theſe Stalks riſe near 2 Feet high, dividing into many ſmall Branches upward, which are garniſhed with Leaves like thoſe below, but are ſmaller, and have few or no Jags on their Edges: Each of theſe ſmaller Branches (or Foot Stalks) are terminated with ſingle Heads of Flowers, having a dry ſilvery ſcaly Empalement, in which are included 3 or 4 Florets, whoſe Petals are broad, flat, indented at their Ends, and of a fine blue Colour, having a dark Spot at Bottom, and in each the 5 Stamina, with their yellow Summits, ſtanding a little above the Petal, make a pretty Appearance.

It has been by ſome Authors titled *Chondrilla cærulea*, *i. e.* Blue Gum Cicory, and by others *Seſamoides*, or *Catanance Seſamoides*. *Caſpar Bauhin* calls it *Chondrilla cærulea cyani capitulo. Pin.* 130. Blue Gum Cicory with a Blue Bottle Head. There is a Variety with double Flowers, which is not common in the *Engliſh* Gardens.

The 2d Sort hath broader Leaves than the firſt, which are ſmoother, and leſs jagged on their Edges: From each Root ariſe one or two Stalks, which grow a Foot and Half high, ſending out 2 or 3 ſlender Foot Stalks, each ſuſtaining a ſingle Head of yellow Flowers, incloſed in a dry ſcaly Empalement, of a darker Colour than thoſe of the firſt; as theſe Flowers are ſmall, they make but little Appearance, therefore the Plant is only kept for the Sake of Variety.

The 1ſt of theſe Plants is Perennial, and may be propagated by Heads taken off the Mother Plant, either in Spring or Autumn; but thoſe Plants which are raiſed from Seeds, are much ſtronger than thoſe from Slips. Theſe Plants are commonly planted in Pots filled with light ſandy Soil, in order to ſhelter them in the Winter from ſevere Froſts; but if they are planted in warm Borders, either under Walls, Pales, or Hedges, and in a moderately dry Soil, they will endure abroad very well. This Plant begins flowering in *May*, and continues till *Auguſt* or *September* (eſpecially if the Summer is not too dry), it is a pretty Ornament to a Garden, and is eaſily kept within Bounds. This may alſo be propagated by Seeds, which ſhould be ſown in a Border of good light Earth in *March*; and in *May*, when the Plants come up, they may be either tranſplanted into Pots or Borders, where they are to remain for flowering. Theſe Plants ſhould remain unremoved for 3 or 4 Years when they are planted in the full Ground, which will cauſe them to flower better, and produce more Seeds. The Seeds ripen in *Auguſt*.

The other Sort is annual, and therefore only propagated by Seeds, which ripen very well in this Country. The Time for ſowing them is early in *March*, in Beds or Borders of light Earth where they are to remain; they come up in a Month's time, and require no other Care but to keep them clean from Weeds, and thin the Plants where too cloſe. Theſe flower in *June*, and perfect Seeds in *Auguſt* or *September*; but as they have little Beauty, are not often kept in Gardens.

CATAPUTIA MAJOR. *See* Ricinus.

CATAPUTIA MINOR. *See* Euphorbia.

CATARIA. *See* Nepeta.

CATCH-FLY. *See* Lychnis.

CATERPILLARS.

There are ſeveral Kinds of this Inſect, which are very pernicious to a Garden; but there are two Sorts which are the moſt common, and deſtructive to young Plants: one of them is that which the white Butterfly breeds: It is of a yellowiſh Colour, ſpotted with black; and commonly infeſts the tender Leaves of Cabbages, Cauliflowers, and the *Indian* Creſs. Theſe eat off all the tender Parts of the Leaves, leaving only the Fibres entire; ſo that very often we ſee, in the Autumn Seaſon, whole Gardens of Winter Cabbages and Savoys almoſt deſtroyed by them; eſpecially in thoſe which are crouded with Trees, or near great Buildings. They increaſe moſt in very dry Seaſons; and when the Plants have been ſtinted by Drought, they are conſtantly attacked; whereas thoſe which are in Vigour, ſeldom ſuffer much by thoſe Inſects. Nor is there any other Method found out to deſtroy them, that I know of, but to pick them off the Plants before they are ſpread from their Neſts; by which Means, though perhaps many may be overlooked, yet their Numbers will be greatly diminiſhed. But this Work muſt be often repeated during the warm Weather, when the Butterflies are abroad, continually depoſiting their Eggs, which in a few Days time will be perfect Caterpillars. But as theſe, for the moſt part, feed upon the outer Leaves of Plants, they are more eaſily taken than the other Sort, which is much larger: The Skin is very tough, and of a dark Colour: This is called, by the Gardeners, a Grub, and is exceeding hurtful. The Eggs of this Sort of Caterpillar, are, for the moſt part depoſited in the very Heart or Center of the Plant (eſpecially in Cabbages); where, after it hath obtained its Form, it eats its Way out through all the Leaves thereof; and alſo their Dung, being lodged between the incloſed Leaves of the Cabbages, gives them an ill Scent.

This Inſect alſo burrows juſt under the Surface of the Ground, and makes great Havock on young Plants, by eating them through their tender Shanks, and drawing them into their Holes. The Miſchief is chiefly done in the Night: whenever you obſerve this, you ſhould every Morning look over your Plants; and wherever you ſee any Plants eaten off, ſtir the Ground round about the Place with your Fingers an Inch deep, and you will certainly find them out. This is the only Method I know of deſtroying them.

CATKINS, or IULUS. By the Botaniſts, called *Flos Amentaceus*: It is an Aggregate of Summits, which are joined together in form of a Rope or Cat's Tail, and is the male Flower of the Trees which produce them; as the Firs, Pines, Cedars, Walnuts, Birch Tree, and Willows.

CATESBÆA. *Lin. Gen. Plant.* The Lily Thorn.

The *Characters* are,

It hath a ſmall permanent Empalement of one Leaf, with five ſharp Indentures; the Flower is of one Leaf, Funnel-ſhaped, having a very long Tube, which gradually widens to the Top, where it is four cornered and ſpread open; it hath four Stamina riſing in the Neck of the Tube, terminated by oblong erect Summits; the roundiſh Germen is ſituated under the Flower, ſupporting a ſlender Style, crowned by a ſingle Stigma. The Germen afterward becomes an oval Berry with one Cell, filled with angular Seeds.

The Name was given to the Genus by Dr. *Gronovius*, in Honour of Mr. *Mark Cateſby*, F. R. S. who brought the Seeds of it firſt into *England*, from the *Bahama Iſlands*, where he found it growing naturally; and he has exhibited a Figure of it in his Hiſtory of *Carolina*.

We know but one *Species* of this Genus, *viz.*

CATESBÆA. *Lin. Sp. Plant.* 109. The Lily Thorn. This is the *Frutex ſpinoſus Buxi foliis, plurimis ſimul naſcentibus, flore tetrapetaloide, pendulo, ſordidè flavo, tubo longiſſimo, fructu ovali croceo, ſemina parva continente. Cateſb. Hiſt. Carol.* 2. *p.* 100. Thorny Shrub, with Box Leaves growing in Cluſters, a four cornered Petal, of a dull yellow Colour, and hanging Flower, with a very long Tube, and an oval Saffron coloured Fruit, containing ſmall Seeds.

This Shrub was diſcovered by Mr. *Cateſby*, near *Naſſau* Town, in the Iſland of *Providence*, where he ſaw two of them growing, which were all he ever ſaw; from theſe he gathered the Seeds, and brought them to *England* in 1726, from which many Plants were raiſed in the *Engliſh* Gardens, ſome of which have ſince flowered here.

It riſes with a branching Stem 10 or 12 Feet high, covered with a pale ruſſet Bark; the Branches come out alternately, from the Bottom to the Top, garniſhed with ſmall Leaves, reſembling thoſe of the Box Tree, coming out in Cluſters all round the Branches, at certain Diſtances; the Flowers come out ſingle from the Side of the Branches, hanging downward; they are tubulous, and near 6 Inches long, very narrow at their Baſe, but widening upward toward the Top, where it is divided into four Parts which ſpread open, and are reflexed backward: theſe are of a dull yellow Colour; after the Flower decays, the Germen ſwells to an oval fleſhy Berry, the Size of a middling Plum, hollow within, and filled with ſmall angular Seeds.

This Shrub is propagated by Seeds, which muſt be procured from the Country where it naturally grows; for it hath not produced any in *England*. If the entire Fruit are brought over in Sand, the Seeds will be better preſerved; when they arrive in *England*, the Seeds muſt be ſown in ſmall Pots filled with light ſandy Earth, and plunged into a moderate hot Bed of Tanners Bark, and now and then moderately watered. If the Seeds are good, the Plants will appear in about ſix Weeks, when, if the Heat of the Bed declines, the Tan ſhould be turned over to the Bottom, and, if neceſſary, ſome freſh added, to renew the Heat; for theſe Plants make but little Progreſs the firſt Year. When the Pots are again plunged into the Tan Bed, they muſt have freſh Air admitted to them every Day, in Proportion to the Warmth of the Seaſon, and frequently refreſhed with Water, in ſmall Quantities, for much Wet will certainly kill them; if the Nights ſhould prove cold, the Glaſſes ſhould be covered with Mats every Evening. As theſe Plants grow ſlowly, they will not require to be removed out of the Seed Pots the firſt Year. In Autumn the Pots ſhould be removed into the Stove, and plunged into the Tan Bed; and during Winter, the Plants ſhould be watered with great Caution; in Spring the Plants ſhould be carefully taken up, and each planted in a ſmall Pot, filled with light ſandy Earth, and plunged into a freſh hot Bed of Tanners Bark, being careful to ſhade them till they have taken freſh Root, alſo to refreſh them with Water gently, as they may require it; and in Summer, when the Weather is warm, they ſhould have a good Share of Air, but in Autumn muſt be removed into the Stove, where they ſhould conſtantly remain, and muſt be treated afterward in the ſame Manner as other tender exotick Plants.

Moſt of the Plants raiſed from Mr. *Cateſby*'s Seeds, were killed by the ſevere Winter in 1739. but two Years ago I received ſome freſh Seeds, which ſucceeded ſo well, as to enable me to communicate Plants, to ſeveral curious Perſons in *England* and *Holland*.

CAUCALIS, Baſtard Parſley.

This is one of the umbelliferous Plants, with oblong Seeds, which are a little furrowed and prickly: The Petals of the Flower are unequal, and Heart-ſhaped.

There are ſeveral *Species* of this Plant preſerved in the Botanick Gardens; but as there is no great Beauty or Uſe in any of them, I ſhall paſs them over with only obſerving, the beſt Seaſon to ſow their Seeds is in Autumn, ſoon after they are ripe; for if they are kept till Spring, they ſeldom produce ripe Seeds again. They are moſt of them biennial, and require to be ſown every other Year. We have five or ſix *Species*, which grow wild in *England*.

CAULIFEROUS Plants [of *Caulis*, *Lat.* a Stalk, and *fero*, to bear]; ſuch Plants as have a true Stalk.

CAULIS is that which riſes ſingle above the Earth, from whence the Leaves or little Branches put forth, as *Jungius* defines it; or it is the upper Part of a Plant ſtretched forth to an Height, ſo that the Fore Parts differ not from the Hind, nor the Right from the Left. In Trees and Shrubs it is called *Caudex*; in Corn, *Calamus*; the Stalk of any Herb; the Stem, Trunk, or Body of a Tree. *Lat.*

CEANOTHUS. *Lin. Gen. Plant.* 237. *Euonymus Com. Hort.* New *Jerſey* Thea.

The *Characters* are,

It hath a turbinated Empalement of one Leaf, which is permanent, and is cut into five acute Parts which cloſe together; the Flower hath five roundiſh equal Petals which ſpread open, and are leſs than the Empalement; it hath five erect Stamina, placed oppoſite to the Petals, of equal Length and terminated by roundiſh Summits. It hath a three cornered Germen, ſupporting a cylindrical Style, crowned by an obtuſe Stigma. The Germen becomes a dry Capſule with three Cells, in which are lodged three oval Seeds.

The *Species* are,

1. CEANOTHUS *foliis trinerviis. Lin. Sp. Plant.* 195. *Ceanothus* with Leaves having three Nerves. This is the *Euonymus Novi Belgii corni fœminæ foliis. Hort. Amſt.* 1. 167. New *Holland* Dogwood with female cornel Leaves, commonly called *New Jerſey* Thea.

2. CEANOTHUS *foliis lanceolatis enerviis, ſtipulis ſubrotundis. Lin. Sp. plant.* 196. *Ceanothus* with Spear-ſhaped Leaves without Nerves, and roundiſh Stipulæ. *Alaternoides Africana lauri ſerratæ folio. Com. Præl.* 61. Baſtard *Alaternus* of *Africa*, with a ſawed Bay Leaf.

3. CEANOTHUS *foliis ovatis ſeſſilibus, floribus ſingularibus alaribus. Ceanothus* with oval Leaves cloſe to the Branches, and ſingle Flowers at the Wings of the Leaves.

The 1ſt Sort grows naturally in *North America*, from whence Plenty of the Seeds have been of late brought to *Europe*, by the Title of *New Jerſey* Thea, where I have been informed the Inhabitants dry the Leaves to uſe as Thea. The People of *Canada* uſe the Root in Venereal Caſes. I have received the Seeds of this Sort from *New England*, *Penſylvania*, *Virginia*, and *Carolina*; and the *French* mention it as a common Shrub in *Canada*, where they ſay the Cattle browſe upon it, and keep it very low.

In *England* this Shrub ſeldom riſes more than 3 or 4 Feet high, ſending out Branches on every Side from the Ground upward. The Branches are very ſlender; and as it is pretty late in the Spring before they begin to ſhoot, they keep growing very late; therefore, unleſs the Autumn proves dry and mild, the tender Shoots are often killed down very low by early Froſts; but, in favourable Seaſons, the extreme Parts of the Shoots only are injured by the Cold. Theſe Branches are garniſhed with oval pointed Leaves, having three longitudinal Veins running from the Foot Stalk to the Point, which diverge in the broad Part of the Leaves from each other: The Leaves are placed oppoſite by Pairs, and are of a light green Colour. At the Extremity of each Shoot the Flowers are produced in cloſe thick Spikes, which are compoſed of five ſmall Leaves, and are of a clear white: Theſe appear in *July*, and make a very fine Appearance during their Continuance; for, as every Shoot is terminated by one of theſe Spikes, ſo the whole Shrub is covered over with Flowers, the Branches commonly growing very cloſe to each other: And when the Autumn proves mild, theſe Shrubs often flower in *October*. After the Flowers are paſt. there ſucceeds to each Flower a tricapſular Seed Veſſel, flated at the Top, opening into three Cells, each having a ſingle Seed. In warm Seaſons the Seeds ripen very well in *England*. This Shrub is beſt propagated by Seeds, which ſhould be ſown in ſmall Pots, and plunged into a moderate hot Bed, to bring up the Plants, which ſhould be inured to bear the open Air by Degrees, and as ſoon as they have obtained a little Strength, they ſhould be expoſed in a ſheltered Situation till Autumn, when they muſt be placed under a hot Bed Frame, to ſcreen them from ſevere Froſt in Winter, but in mild Weather they ſhould be fully expoſed to the open Air; for while the Plants are young, they will not endure the Cold of Winter. In the following Spring, before the Plants begin to ſhoot, they ſhould be tranſplanted; ſome of them may be put into ſeparate Pots, and the others into a Nurſery Bed, in a warm Situation, where they may remain a Year or two to get Strength, after which Time they may be removed to the Places where they are deſigned to remain. They ſhould have a dry Soil, and ſheltered Situation, where they will thrive and flower extremely well; but in ſtiff cold Land, they are always very late in the Spring before they come out, ſo that their young Shoots are full of Sap in Autumn, and the firſt Froſt commonly kills their Tops, which frequently cauſes them to die great part of their Length.

It may alſo be propagated by laying down the young Branches, which, in a light Soil, will put out Roots in a Year's Time, but theſe Layers ſhould not be much watered; for as the Shoots are tender, Moiſture will often occaſion their roting, when given in Quantities, or too often repeated; therefore the beſt Method is to cover the Surface of the Ground in dry Weather, all round the Layers, which will preſerve a ſufficient Moiſture in the Ground, provided the Seaſon is not extremely dry, in which Caſe they ſhould have a little Water once in 8 or 10 Days, which will be ſufficient.

The beſt Time for laying down theſe Branches, is in Autumn, and if after this is performed, the Surface of the Ground is covered over with ſome old Tan, taken from a decayed hot Bed, it will prevent the Froſt from penetrating the Ground, which will ſecure them from Injury, and the ſame Covering will prevent the Winds from drying the Ground in Spring, and thereby promote their putting out Roots, Theſe Layers, when rooted, may be taken up the following Spring, and treated in the ſame Manner as thoſe raiſed from Seeds.

The 2d Sort grows naturally at the *Cape of Good Hope*, from whence it was originally brought to *Holland*, and has been ſince communicated to moſt of the curious Gardens in *Europe*, under the Title of *Alaternoides*, &c. and by ſome Authors it is titled *Ricinoides Africana arboreſcens*, &c. but Dr. *Linnæus*, having examined the Characters more exactly, has joined it to this Genus.

This riſes 10 or 12 Feet, with a woody Stem, covered with a rough dark-coloured Bark, and ſends out many weak Branches, which hang downward; theſe while young are green, but afterward change to a purpliſh Colour. They are garniſhed with oblong pointed Leaves, of a lucid green, which are ſmooth, and ſlightly ſawed on their Edges. The Flowers are ſmall, of an herbaceous Colour, coming out from the Side of the Branches; they ſometimes appear in *July*, but are not ſucceeded by Seeds in this Country, nor do the Plants often produce Flowers, ſo that they are preſerved only for the Beauty of their ſhining ever-green Leaves, which make a Variety in the Green-houſe during the Winter Seaſon.

It may be propagated either by Layers, or Cuttings, the latter being a very ſure and expeditious Method is generally prefered. The Cuttings ſhould be planted in Spring in Pots filled with good Kitchen Garden Earth, and plunged into a very moderate hot Bed, obſerving to ſhade them in the Heat of the Day, and now and then refreſh them with Water. In about two Months, or leſs, they will have taken Root, when they muſt be gradually inured to the open Air, placing them in a ſheltered Situation till they have obtained Strength, when they may be ſeparated, and each planted in a ſmall Pot filled with light Earth, placing them in the Shade till they have taken freſh Root, then they may be removed and intermixed with other exotick Plants for the Summer Seaſon; in Autumn they muſt be houſed with Myrtles, and treated in the ſame Manner.

The 3d Sort was ſent me from *Paris*. This grows naturally at *Senegal*, in *Africa*, from whence the Seeds were brought; it riſes with a ſhrubby Stalk, about 3 Feet high, ſending out ſeveral horizontal Branches, garniſhed with oval Leaves placed oppoſite growing cloſe to the Branches; the Flowers come out at the Wings of the Leaves, with very ſhort Foot Stalks, they are of an herbaceous Colour, and ſtand ſingle at each Joint, almoſt the whole Length of the Branches; theſe are ſucceeded by dry Capſules, ſhaped like thoſe of the firſt Sort.

This Plant requires to be placed in a warm Stove, otherwiſe it will not thrive in *England*; it is propagated by Seeds ſown on a hot Bed in Spring, and when the Plants are fit to remove, they ſhould be each planted in a ſmall Pot filled with light ſandy Earth, and plunged into a hot Bed of Tanners Bark, obſerving to ſhade them till they have taken Root; then they muſt be treated as other tender exotick Plants. In Autumn they muſt be placed in the Bark Stove, and during the Winter, muſt be watered with great Caution, for too much Moiſture at that Seaſon will deſtroy them.

CEDRUS. The Cedar Tree of *Barbadoes*. Mahogony, &c.

The *Characters* are,

It hath a tubulous Bell-ſhaped Empalement of one Leaf, indented in five Parts. The Flower is of one Leaf, divided at the Top into five Parts; it hath five ſhort Stamina, which adhere at Bottom to the Germen, and are terminated by roundiſh Summits; in the Center is ſituated the roundiſh Germen, ſupporting a thick Stigma; the Germen becomes an oval Pod, having five Cells, opening from the Bottom upward with five Valves, having a double Cover, the outer being thick and woody, the inner very thin, which immediately ſurrounds the Seeds. In the Center is fixed a five cornered Column, the Length of the Pod, whoſe Angles are oppoſite to the Fiſſures of the Pod, to which the Seeds adhere, placed over each other like the Scales of Fiſh; theſe are thick at their Baſe, but upward are flat and thin, like the Wings adhering to the Seeds of Firs and Pines.

As the Cedar of *Libanus* is by *Tournefort* very properly refered to the Genus of *Larix*, and all the Berry bearing Cedars, are joined to the Junipers, I have given the Title of Cedrus to this Genus, as they were mentioned by imperfect Titles by moſt of the Authors who have treated of them; and as the firſt Sort has been generally known by the Appellation of Cedar, in the Countries were it naturally grows, ſo the applying the ſame Name to thoſe Plants, which agree in their eſſential Characters with it, will join them properly together.

The *Species* are,

1. CEDRUS *foliis pinnatis, foliolis multijugatis obtuſis, fructu ovali glabro.* Cedar Tree with winged Leaves, compoſed of many Pairs of ſmall Leaves (or Lobes) which are obtuſe, and an oval ſmooth Fruit. This is the *Cedrus Barbadenſium, alatis fraxini foliis non crenatis, fructu ſingulari, quinis involucris craſſis validis cochleato cavis, totidem ſemina membranis adaucta & columnæ canaliculatæ pentagonæ prægrandi adnata, occludentibus ornato. Pluk. Phyt. Tab.* 157. The *Barbadoes* Cedar Tree.

2. Cedrus *foliis pinnatis, foliolis oppoſitis, glabris, floribus racemoſis ſparſis.* Cedar with winged Leaves, whoſe Lobes are ſmooth, and ſtand oppoſite, and Flowers growing in looſe Bunches. This is the *Arbor foliis pinnatis, nullo impari alum claudente, nervo ad latus unum excurrente fructu anguloſo magno, ſemine alato inſtar Pinûs. Cateſb. Hiſt. Carol. Vol.* II. p. 181. Mahogony Tree.

3. Cedrus *foliis alternis ſimplicibus, cordato-ovatis acutis, fructu pentagono mucronato.* Cedar with ſingle Leaves placed alternately, which are oval, Heart-ſhaped, and acute, and have a five cornered pointed Fruit. This is the *Arbor excelſa Coryli folio ampliore. Houſt. MSS.* The Tall Tree with a large Hazle Leaf.

The 1ſt Sort is commonly known under the Title of Cedar in the *Britiſh* Iſlands of *America*, where this Tree grows naturally, and is one of the largeſt Trees of that Country. The Trunks are ſo large, that the Inhabitants hollow them, and form them into the Shape of Boats, and Periaguas, for which Purpoſe they are extremely well adapted; the Wood being ſoft, it may be cut out with great Facility, and being light, it will carry a great Weight on the Water. There are Canoes in the *Weſt-Indies*, which have been formed out of theſe Trunks, which are forty Feet long, and ſix broad; the Wood is light, of a brown Colour, and has a fragrant Odour, from whence the Title of Cedar has been given to it. The Wood is frequently cut into Shingles for covering Houſes, and is found very durable; but as the Worms are apt to eat this Wood, it is not proper for building Ships, though often uſed for this Purpoſe, as alſo for ſheathing them; it is often uſed for wainſcoting Rooms, and to make Cheſts, becauſe Vermin do not ſo frequently breed in it, as in many other Sorts of Wood, this having a very bitter Taſte, which is communicated to whatever is put into the Cheſts, eſpecially when the Wood is freſh, for which reaſon it is never made into Caſks, becauſe ſpirituous Liquors will diſſolve part of the Reſin, and thereby acquire a very bitter Taſte.

This Tree riſes with a ſtrait Stem, to the Height of 70 or 80 Feet; while young the Bark is ſmooth, and of an Aſh Colour, but as they advance, the Bark becomes rough, and of a darker Colour. Toward the Top it ſhoots out many Side Branches, which are garniſhed with winged Leaves, compoſed of 16 or 18 Pair of Lobes (or ſmall Leaves) ſo that they are ſometimes near three Feet long; the Lobes are broad at their Baſe, and near two Inches long, blunt at their Ends, and of a pale Colour; theſe emit a very rank Odour in the Summer Seaſon, ſo as to be very offenſive. As I have not ſeen any Flowers upon theſe Trees, I can give no Deſcription of them. The Fruit is oval, about the Size of a Partridge's Egg, ſmooth, of a very dark Colour, and opens in five Parts, having a five cornered Column ſtanding in the Middle, between the Angles of which the winged Seeds are cloſely placed, laping over each other like the Scales of Fiſhes.

There are ſome Plants of this Sort in *England*, which are preſerved in the Gardens of thoſe who are curious in collecting exotick Plants; theſe have been raiſed from the Seeds, brought from *Barbadoes*, but they are too tender to live in the open Air in *England*, therefore theſe Plants ſhould be treated in the ſame Manner as the Mahogony next mentioned, but they are of much quicker Growth; for in four Years, from the Seed, I had the Plants upward of ten Feet high.

I received Plants of this Kind from *Paris*, by the Title of *Semiruba*, but whether the Root of this Tree is what they uſe in Medicine under that Appellation, I cannot ſay. The Seeds have alſo been ſent me from the *French* Iſlands, by the Title of *Acajou Cedre*.

It is propagated by Seeds, which are eaſily procured from the *American* Iſlands; they muſt be ſown on a hot Bed in Spring, and the Plants treated as the next.

The 2d Sort is the Mahogony, whoſe Wood is now well known in *England*.

This Tree is a Native of the warmeſt Parts of *America*, growing plentifully in *Cuba*, *Jamaica*, and *Hiſpaniola*; there are alſo many of them in the *Bahama* Iſlands. In *Cuba* and *Jamaica* there are Trees of a very large Size, ſo as to cut into Planks of ſix Feet Breadth: but thoſe on the *Bahama* Iſlands are not ſo large, though they are frequently 4 Feet Diameter, and riſe to a great Height, notwithſtanding they are generally found growing upon the ſolid Rocks, where there is ſcarce any Earth for their Nouriſhment. The Wood which has been brought from the *Bahama* Iſlands has uſually paſſed under the Appellation of *Madeira* Wood, but there is no Doubt of its being the ſame as the Mahogony. The *Spaniards* make great Uſe of this Wood for building Ships, for which Purpoſe it is better adapted, than any other Sort of Wood yet known, being very durable, reſiſting Gun Shot, and burying the Shot without ſpintering; nor is the Worm ſo apt to eat this Wood as that of the Oak, ſo that for the *Weſt-Indies* the Ships built of Mahogony are preferable to any other.

The Excellency of this Wood, for all domeſtick Uſes, is now ſufficiently known in *England*; and it is a Matter of Surpriſe, that the Tree ſhould not have been taken Notice of by any Hiſtorian or Traveller, to this Time except Mr. *Cateſby*, in his *Natural Hiſtory of* Carolina, *and the* Bahama *Iſlands*, although the Wood has been many Years brought to *England* in great Quantities.

In the *Weſt-Indies* theſe Trees are of quick Growth, and arrive to a large Size in a few Years; the Manner of their Propagation in the *Bahama* Iſlands, as deſcribed by Mr. *Cateſby*, is as follows; when the Fruit is ripe, the outer hard Shell, or Covering, ſeparates at the Bottom, next the Foot Stalk, thereby expoſing the Seeds, which are faſtened to a hard five cornered Column, ſtanding in the Middle; theſe Seeds being broad and light, are diſperſed on the Surface of the Ground, which is very rocky; Such of the Seeds as happen to fall into the Fiſſures of the Rock, very ſoon ſend forth Roots, and if theſe tender Fibres meet with Reſiſtance from the Hardneſs of the Rock, they creep out of the Surface of it, and ſeek another Fiſſure, into which they creep, and ſwell to ſuch a Size and Strength, as to break the Rock, and thereby make Way for the Root's deeper Penetration.

The Leaves of this Tree are winged like thoſe of the Aſh, having commonly 6 or 8 Pairs of Pinnæ (or Lobes) which are ſhorter and broader at their Baſe, than thoſe of the Aſh, where they adhere to the Midrib, by very ſhort Foot Stalks; theſe Lobes are very ſmooth, having but one Vein running through each, which is always on one Side, ſo as to divide them unequally. We have no perfect Account of the Flower of this Tree; thoſe which are exhibited in Mr. *Cateſby's Natural Hiſtory*, were drawn from a withered imperfect Fragment, which were the only Remains of the Flowers, which could be found at the Time when he was there; but the Fruit he has delineated very exactly, as I have had an opportunity of comparing it with ſome which have been brought to *England*. The entire Fruit, before it opens, is of a brown Colour; theſe Fruit grow erect, upon long Foot Stalks, which cloſely adhere to the five cornered Column, running through the Middle of the Fruit, and to which the Seeds are faſtened, lying *imbricatim*, like Slates on a Houſe, over each other; ſo that when the Fruit is ripe, the outer Cover divides at the Bottom into five equal Parts, and when theſe fall off, and the Seeds are diſperſed, the Foot Stalk and the Column remain ſome Months after on the Tree.

It is propagated by Seeds, which may be eaſily procured from the *Bahama* Iſlands, from whence moſt of the good Seeds have been brought to *England*; for moſt of thoſe ſent from *Jamaica*, although brought in their Pods, have not ſucceeded, whereas thoſe from the *Bahama* Iſlands have grown as well as if they were immediately taken from the Trees; the Seeds ſhould be ſown in ſmall Pots filled with light ſandy Earth, and plunged into a hot Bed of Tanners Bark, giving them a gentle Watering once a Week; if the Seeds are good, the Plants will appear in a Month, or five Weeks, and when they are two Inches high, a ſufficient Number of ſmall Pots ſhould be filled with light Earth, and plunged into the Tan Bed a Day or two, that the Earth may be warmed before the Plants are put into the Pots; then the young Plants ſhould be ſhaken out of the Pots, and carefully ſeparated, ſo as not to tear their Roots, and each planted in a ſingle Pot, being careful to ſhade them till they have taken freſh Root, after which they muſt be treated in the ſame Manner as other tender Plants from the ſame Climate, being careful not to give them much Water, eſpecially in Winter, alſo when they are ſhifted, to preſerve the Earth about their Roots, otherwiſe they are very ſubject to periſh; for in the Country where they grow naturally, they ſay it is not poſſible to remove theſe Trees, ſo as to live; if the Plants are properly managed, they will make conſiderable Progreſs; I have ſome Plants now in *Chelſea* Garden, near five Feet high, which are only three Years Growth from Seeds.

As the Wood of this Tree is now ſo generally uſed in *England*, it might ſurely be worthy the Care of the Planters in *America*, many of whom are poſſeſſed of barren rocky Lands, which at preſent produce no Profit, but if the Seeds of this Tree were ſown there, might turn out greatly to the Advantage of their Succeſſors, tho the preſent Poſſeſſors, ſhould not live to enjoy the Profit.

The 3d Sort was diſcovered by the late Dr. *Houſtoun*, at *Campeachy*, from whence he ſent the Seeds to *England*, which ſucceeded in ſeveral Gardens; when he firſt obſerved theſe Trees, they were deſtitute of Leaves, but loaded with ripe Fruit; and on his ſecond Viſit to the Place, he found the Trees in full Verdure, but no Appearance of Flowers, ſo he was at a Loſs to know what Genus it belonged to; but as the Fruit of the Trees agrees exactly with thoſe of the two former Species, I have ventured to join it to them.

Theſe Trees uſually riſe 80 Feet, or more, and divide into many large Branches toward the Top, garniſhed with Leaves, ſomewhat reſembling thoſe of the Witch Hazel, but are broader at their Baſe, and cut angular at their Top; theſe are of an Aſh Colour underneath, and are ſet on the Branches without any Order; the Fruit of this Tree is much larger than that of the *Barbadoes* Cedar, being broad at the Baſe, and diminiſhing gradually to the Top, where it terminates in a Point, being upwards of two Inches long; this has alſo a Column, or woody Core, running Lengthways through the Fruit, to which the winged Seeds adhere as in the two former; but as both their Fruit are ſmooth on the Outſide, this differs from them, in having five Angles running from the Baſe upward; at each Angle the Fruit, when ripe, ſeparates, and expoſes the winged Seeds, which are diſperſed by the Winds.

We have no Account of the Wood of this Tree, whether it is uſed for Building, or other Purpoſes, as there have been few Perſons of Curioſity in that Country, the Cutters of Logwood being the chief People who inhabit there, from whom there can be little known of the Produce. The Plants raiſed from Seeds in *England*, have made great Progreſs for the two firſt Years, but afterward were but ſlow of Growth; for, in ſix Years more, they did not ſhoot ſo much, as in the firſt Year from the Seed, when they grew more than three Feet high. I made ſeveral Trials to propagate the Trees by Cuttings and Layers, but without Succeſs; ſo that by Seeds, ſeems to be the only Method of having them; theſe may be raiſed and managed as the two foregoing Sorts, and with them conſtantly kept in the Bark Stove.

CEDAR of BERMUDAS. *See* Juniperus.

CEDAR of CAROLINA. *See* Juniperus.

CEDAR of JAMAICA. *See* Theobroma.

CEDAR of LIBANUS. *See* Larix.

CEDARS of LYCIA, PHOENICIA and VIRGINIA. *See* Juniperus.

CEIBA. *See* Bombax.

CELASTRUS. *Lin. Gen. Plant.* 239. *Euonymoides. Iſnard. Ac. R. Sc.* 1716. The Staff Tree.

The *Characters* are,

The Flower hath a ſmall one leaved Empalement, cut into five unequal blunt Parts. The Flower hath five oval Petals, which are equal, and ſpread open. It hath five Stamina as long as the Petals, terminated by ſmall Summits, and a ſmall Germen with a large Receptacle, marked with ten deep Channels, ſupporting a ſhort Style crowned with an obtuſe trifid Stigma. The Germen afterward becomes an oval, blunt, three cornered Capſule, opening in three Cells, each containing an oval ſmooth Seed.

The *Species* are,

1. CELASTRUS *inermis, foliis ovatis integerrimis. Lin. Sp. Plant.* 196. Smooth Staff Tree with oval entire Leaves. This is the *Euonymus Virginianus rotundifolius, Capſulis Coccineis eleganter bullatis. Pluk. Alm.* 139. Round leaved *Virginia* Spindle Tree with ſcarlet Capſules, elegantly ſtuded.

2. CELASTRUS *inermis, caule volubili. Lin. Sp. Plant.* 196. Smooth Staff Tree with a twining Stalk. This is the *Euonymoides Canadenſis ſcandens foliis ſerratis. Iſnard. Ac. Reg.* 1716. Climbing *Canada* Baſtard *Euonymus* with ſawed Leaves.

3. CELASTRUS *ſpinis nudis, ramis teretibus, foliis acutis,*

tis. Hort. Cliff. 72. Staff Tree with naked Spines, taper Branches, and pointed Leaves. This is the *Lycium Æthiopicum pyracanthæ foliis. Hort. Amſt.* 1. p. 163. *Ethiopean* Boxthorn with Pyracantha Leaves.

4. Celastrus *ſpinis folioſis, ramis angulatis, foliis obtuſis. Hort. Cliff.* 73. Staff Tree with Leaves on the Spines, angular Branches, and obtuſe Leaves. *Lycium Portoricenſe, Buxi foliis anguſtioribus. Pluk. Alm.* 234. *Tab.* 202. *f.* 3. Boxthorn with narrow Box Leaves.

5. Celastrus *foliis oblongo-ovatis nervoſis, alternis, floribus faſciculatis lateralibus.* Staff Tree with oblong, oval, nervous Leaves, placed alternate, and Flowers growing in Bunches from the Sides of the Branches. *Frutex lauri folio pendulo, fructu tricocco, ſemine nigro ſplendente. Cateſb. Hiſt. Carol. Vol.* I. The Red Wood.

The 1ſt Sort grows naturally in *Virginia*, and many Parts of *North America*, where is riſes 8 or 10 Feet; but in *England* there are few of them more than Half that Height. It generally puts out two or 3 Stems from the Root, which divide upward into ſeveral Branches, covered with a brown Bark, and garniſhed with Leaves near three Inches long, and 2 broad, placed alternately on the Branches; the Flowers come out in looſe Spikes at the End of the Branches; theſe are white, made up of five oval Petals, with a Germen in the Center, attended by five Stamina, when the Flowers fall off, the Germen ſwells to a 3 cornered Capſule, of a ſcarlet Colour, ſet full of ſmall Protuberances; this opens in three Parts, each containing a hard oval Seed, covered with a thin red Pulp. This Shrub flowers in *July*, but rarely produce Seeds in *England*.

It is propagated by Layers, which will take Root in one Year; the young Branches only are proper for this Purpoſe, where there is not any of theſe near the Ground, the main Stalks ſhould be drawn down, and faſtened with Pegs to prevent their riſing, and the young Shoots from them ſhould be laid. The beſt Time for doing this is in Autumn, when they begin to caſt their Leaves, and in 12 Months they will be ſufficiently rooted, when they ſhould be cut from the old Plant, and planted in a Nurſery for a Year or two to get Strength, after which they muſt be removed to the Places where they are to remain. This Shrub grows naturally in moiſt Places, ſo will not thrive well in a dry Soil. It is very hardy, and bears the Cold of our Winters very well. It is alſo propagated by Seeds, which are frequently brought from *America*; but as theſe rarely arrive here time enough to ſow before the Spring, the Plants never come up the firſt Year, therefore the Seeds may be ſown either in Pots, or in a Bed of loamy Earth, keeping them clean from Weeds during the Summer, and thoſe in the Pots ſhould be placed in the Shade till Autumn, when the Pots ſhould be plunged into the Ground in a warm Situation, or placed under a common Frame, to prevent the Froſt from penetrating through the Side of the Pots; and if the Surface of the Ground, and Bed where the Seeds are ſown, are lightly covered with ſome old Tan from a decayed hot Bed, it will ſecure the Seeds from being hurt by ſevere Froſts. In Spring the Plants will come up, which muſt be kept clean from Weeds, and, if the Seaſon proves dry, they ſhould have Water now and then, which will greatly forward their Growth. If the Plants make good Progreſs the firſt Summer, they may be tranſplanted into a Nurſery in Autumn, otherwiſe they ſhould remain in the Seed Bed till the ſecond Year, when they may be treated as the Layers.

The 2d Sort ſends out ſeveral ligneous Stalks from the Root, which are flexible, and twiſt themſelves about whatever Trees and Shrubs grow near them, or when they are at a Diſtance from ſuch Support, they twine about each other, and riſe to the Height of 12 or 14 Feet; but when they faſten themſelves about Trees they will grow much taller, but wherever this happens, their Branches girt the Trees ſo cloſely, as in a few Years will deſtroy them. Theſe are garniſhed with oblong Leaves, about three Inches long, and near two broad, which are ſawed on their Edges, and placed alternately on the Branches; they are of a lively green above, and paler on their under Side, having ſeveral tranſverſe Nerves from the Middle to the Side. The Flowers are produced in ſmall Bunches toward the End of the Branches, which are of an herbaceous Colour, compoſed of five roundiſh Petals; theſe are ſucceeded by roundiſh three cornered Capſules, which are red, and, when ripe, ſpread open in three Parts, diſcloſing the Seeds in the ſame Manner as our common Spindle Tree. This flowers about the Beginning of *June*, and the Seeds generally ripen well in *England* in Autumn. The Plants may be propagated from the Seeds, or by Layers, as the former Sort; it delights in a ſtrong loamy Soil, rather moiſt than dry, and will grow in Woods among other Trees and Shrubs, where, when the Fruit is ripe, they make a pretty Appearance. It grows naturally all over *North America*, and is extremely hardy.

The 3d Sort is a Native of *Ethiopia*, from whence the Seeds were firſt brought to the Gardens in *Holland*, where the Plants were propagated, and have been ſince communicated to moſt of the curious Gardens in *Europe*. This riſes with an irregular Stalk, about 3 or 4 Feet high, ſending out ſeveral Side Branches, covered with brown Bark, and garniſhed with Leaves, about two Inches long, and more than Half an Inch broad, ſome of which are pointed, and others obtuſe; they are ſtiff, of a lucid green, and come out irregularly from the Branches; theſe continue green thro' the Year. The Flowers are produced from the Side of the Branches, in looſe Tufts, many of them ariſing from one Point, ſtanding upon long Foot Stalks; they are of an herbaceous white Colour, compoſed of five Petals, which ſpread open, and five ſpreading Stamina, which ſurround a ſwelling Germen, ſupporting a tapering Style, crowned by an obtuſe trifid Stigma; the Germen becomes an oval Fruit, of a fine red Colour, which opens in 3 Cells, containing one oblong hard Seed, the other two Cells being generally empty.

This Plant is commonly propagated by Cuttings in *Europe*, which is more expeditious than raiſing them from Seeds, becauſe they rarely come up the firſt Year. The Cuttings may be planted any Time in Summer; but thoſe which are planted early, will have more Time to get Strength before Winter. They ſhould be planted in ſmall Pots, which will contain 4 Cuttings in each; the Earth of a Kitchen Garden, well cultivated, is as good as any for this Purpoſe. The Pots ſhould be then plunged into a moderate hot Bed, and ſhaded from the Sun

Sun every Day, and gently refreſhed with Water now and then; when they have taken Root they muſt be gradually expoſed to the open Air, placed in a ſheltered Situation till they have obtained Strength, when they ſhould be ſeparated, and planted each in a ſmall Pot filled with the ſame Earth, then placed in the Shade till they have taken freſh Root, after which they may be placed with other exoticks in a ſheltered Situation till Autumn, when they muſt be houſed with Myrtles, and require the ſame Treatment.

This is titled *African* Barberry by the ignorant; from the Reſemblance of its Fruit to that of the Barberry.

The 4th Sort grows naturally at the *Cape of Good Hope*, from whence I received the Seeds. This riſes 10 or 12 Feet, with a ſlender ligneous Stalk, covered with a light Aſh-coloured Bark, and full of Joints, armed with long Spines, upon which grow many ſmall Leaves; the Branches are ſlender, and armed with the ſame Spines at every Joint, but the whole Plant is ſo weak, as to require ſome Support, without which they would fall to the Ground. The Leaves come out in Cluſters, without any order, ſhaped ſomewhat like thoſe of the narrow Box Tree, but longer, and of a looſe Texture; the Branches are angular, and when young their Bark is whitiſh. As I have not ſeen the Flowers of this Shrub, I can give no farther Deſcription of it.

This riſes very eaſily from Seeds, and the Plants make great Progreſs; for I have raiſed them 4 Feet high in two Years from Seeds, without any artificial Heat; and ſome of the Plants have lived through two Winters againſt a South-eaſt Wall, but theſe have ſhed their Leaves in Winter, whereas thoſe which were removed into the Green-houſe have retained their Verdure thro' the Year.

It may be propagated by Cuttings, which ſhould be planted in Spring, and treated in the Manner directed for the former Sort; or if the young Shoots are laid, they will take Root in one Year, and may then be tranſplanted either into Pots, or againſt a good aſpected Wall, where I find they will endure our ordinary Winters without any Protection; eſpecially if they are covered in ſevere Froſts while young. Thoſe in Pots will require a little Shelter in Winter, but ſhould not be tenderly treated, for that will cauſe them to have weak Branches, nor will the Leaves have ſo much Verdure, as when they are expoſed to the open Air in mild Weather.

The 5th Sort grows naturally in the *Bahama* and ſome of the *Caribee* Iſlands, from whence I have ſeveral Times received the Seeds. This riſes with a ſlender Stem, about 18 or 20 Feet high, ſending out ſeveral weak Branches toward the Top, garniſhed with oblong oval Leaves, about 3 Inches long, and near 2 broad, having ſeveral tranſverſe Nerves running from the Middle to the Side, and ſtand alternately on the Branches. The Flowers come out in Cluſters from one Point, on the Side of the Branches, ſtanding upon long ſlender Foot Stalks; theſe are ſmall, white, and are ſucceeded by roundiſh 3 cornered Capſules, which have each one roundiſh, ſhining, black Seed. The Wood, when recently cut, is of a beautiful red Colour, but when expoſed to the Air ſome Time, fades and becomes paler.

This is propagated by Seeds, which ſhould be ſown on a hot Bed in Spring, and when the Plants are fit to remove, they muſt be each tranſplanted into a ſmall Pot, filled with light ſandy Earth, and plunged into a hot Bed of Tanners Bark, and ſhaded till they have taken freſh Root, then they muſt be treated as other tender Exoticks; in Autumn they muſt be removed into the Stove, plunging them into the Tan Bed. During the Winter Seaſon they muſt have but little Water, and in Summer they ſhould have a large Share of Air admitted to them, in warm Weather, but muſt conſtantly remain in the Stove. With this Management, I have raiſed theſe Plants 18 Feet high, which have flowered and ripened Seeds.

CELERY or SALARY. *See* Apium.

CELLS of Plants [of *Cellæ*, Lat.] are thoſe Partitions or hollow Places in the Huſks or Pods of Plants, in which the Seed is contained.

CELOSIA. *Lin. Gen. Plant.* 255. *Amaranthus. Tourn. Inſt. R. H.* 234. *Tab.* 118. Amaranth.

The *Characters* are,

The Empalement is permanent, and compoſed of three dry, coloured Leaves. The Flower hath five erect, ſharp-pointed Petals, permanent, ſtiff, and ſhaped like a Flower Cup. It hath a ſmall Nectarium joined to the Border of the Germen, to which adhere the five Stamina, terminated by turning Summits. The globular Germen ſupports an upright Style, as long as the Stamina, crowned with a ſingle Stigma. The Empalement becomes a globular Capſule with one Cell opening horizontally containing roundiſh Seeds.

The *Species* are,

1. CELOSIA *foliis lanceolatis, pedunculis angulatis, ſpicâ ovatâ-oblongâ. Lin. Sp. Pl.* 205. *Celoſia* with Spear-ſhaped Leaves, angular Foot Stalks, and an oval oblong Spike. *Amaranthus ſpicâ albeſcente habitiore. Martyn. Cent.* Amaranthus with a thick whitiſh Spike.

2. CELOSIA *foliis oblongo-ovatis, pedunculis teretibus ſubſtriatis, ſpicâ oblongâ. Lin. Sp. Pl.* 205. *Celoſia* with oblong oval Leaves, taper ſtriated Foot Stalks, and an oblong Spike. *Amaranthus criſtatus. Camer. Epit.* Creſted Amaranth, commonly called Cockſcomb.

3. CELOSIA *foliis lanceolato-ovatis, paniculâ diffuſâ filiformi. Flor. Virg.* 144. *Celoſia* with oval Spear-ſhaped Leaves, and a ſlender diffuſed Panicle. This is the *Amaranthus paniculâ flavicante gracili holoſericeâ. Sloan. Hiſt.* Amaranth with a ſlender ſilky yellowiſh Panicle.

The 1ſt Sort grows naturally in *America*, from whence I have frequently received the Seeds. This riſes with an upright Stalk about two Feet high, which is garniſhed with long Spear-ſhaped Leaves ending in Points, of a pale Colour; thoſe on the lower Part being 4 or 5 Inches long, and one and a Half broad in the Middle, but they diminiſh gradually in their Size upward. Toward the upper Part of the Stalk, there are a few Side Branches ſent out which ſtand erect; each of which is terminated by a ſlender Spike of Flowers, and the principal Stalk is terminated by one which is much larger; this is two or three Inches long, and about as thick as a Man's middle Finger, the whole Spike being of a ſilvery Colour. But there is a Variety of this, with ſlender pyramidal Spikes, intermixed with red toward the Top, the Seeds of which I received from Dr. *Linnæus*, by the above Title, but I am inclinable to think it is different from that which was figured by Dr. *Martyn* in his Decades of rare Plants, which I have cultivated many Years in the *Chelſea* Garden, and have never found it vary. The Spike of this is much thicker than that of *Linnæus*'s, and is of equal Size the whole Length, whereas his diminiſhes almoſt to a Point at the Top, and the Colour of both are very different; but as I have had but one year's Trial of *Linnæus*'s, ſo I cannot tell how that may alter in Time. This Sort is annual like the other Amaranths, and requires the ſame Culture.

The 2d Sort is well known, by its common Appellation of Cockſcomb; which was given to it from the Form of its creſted Head of Flowers, reſembling a Cockſcomb; of this there are many Varieties, which differ in their Form, Magnitude and Colours; but as they vary from Seeds, are not enumerated as diſtinct Species. I have raiſed great Varieties of theſe from Seeds which came from *China*, but have generally found them alter in a few Years, notwithſtanding great Care has been taken, in the ſaving their Seeds: The principal Colours of their Heads are red, purple, yellow, and white; but I have had ſome, whoſe Heads have been variegated with 2 or 3 Colours. I alſo raiſed ſome from Seeds which I received from *Perſia*, whoſe Heads were divided like a Plume of Feathers, which were of a beautiful ſcarlet Colour; but theſe in a few Years degenerated: Therefore I ſhall include all the different Varieties of Cockſcomb, under this general Title.

The Seeds of the 3d Sort were ſent me from *Jamaica*. This grows naturally in moſt of the Sugar Iſlands: It riſes with a weak Stalk near 4 Feet high, garniſhed with oblong pointed Leaves, ſtanding oppoſite at each Joint, and pretty far aſunder. The Flowers come out in looſe Panicles from the Side of the Stalks, and at the End of the Branches: Theſe are divided into a great Number of very ſlender Spikes, of a pale yellow, ſhining with a gloſs like Silk. The Plants of this periſhed in Autumn, without perfecting their Seeds.

In order to have large fine Amaranths, great Care ſhould be taken in the Choice of the Seeds, for if they are not carefully collected, the whole Expence and Trouble of raiſing them will be loſt. When you are provided with good Seeds, they muſt be ſown on a hot Bed (which ſhould have been prepared a few Days before, that the violent Heat may be abated) about the Beginning of *March*; and in about a Fortnight's time (if the Bed is in good Temper) the Plants will riſe; but as they are tender when they firſt appear, ſo they require great Care for a few Days till they get Strength; firſt, in giving them a due Proportion of Air, to prevent their drawing up weak, and next, to keep them from Moiſture; for a ſmall Share of Moiſture will cauſe their tender Stems to rot: In ſowing the Seeds, care ſhould be taken not to put them too cloſe, for when the Plants come up in Cluſters, they frequently ſpoil each other, for want of Room to grow: In a Fortnight or three Weeks time, the Plants will be fit to remove, when you muſt prepare another hot Bed, covered with good rich light Earth, about 4 Inches thick; which ſhould be made a few Days, that it may have a proper Temperature of Heat; then raiſe up the young Plants with your Finger, ſo as not to break off the tender Roots, and prick them into your new hot Bed about 4 Inches Diſtance every Way, giving them a gentle Watering to ſettle the Earth to their Roots: But in doing this, be very cautious not to bear the young Plants down to the Ground by haſty watering, which rarely riſe again, or at leaſt ſo as to recover their former Strength in a long Time, but very often rot in the Stems, and die quite away.

After the Plants are tranſplanted, they muſt be ſcreened from the Sun till they have taken freſh Root; but as there is generally a great Steam riſing from the Fermentation of the Dung, which condenſes on the Glaſſes, and dropping on the Plants, very frequently deſtroys them; ſo the Glaſſes ſhould be frequently turned in the Day-time, whenever the Weather will permit; but if the Weather happens to prove bad, that you cannot turn your Glaſſes, it will be of great Service to your Plants, to wipe off all the Moiſture 2 or 3 Times a Day with a woollen Cloth. When your Plants are firmly rooted, and begin to grow, you muſt obſerve to give them Air every Day (more or leſs, as the Weather is cold or hot) to prevent their drawing up too faſt, which greatly weakens their Stems.

In about three Weeks or a Month theſe Plants will have grown ſo as to meet, and will ſtand in need of another hot Bed, which ſhould be of a moderate Temper, and covered with the ſame rich Earth about ſix Inches thick, in which they ſhould planted (obſerving to take them up with as much Earth about their Roots as poſſible) at 7 or 8 Inches Diſtance every Way, giving them ſome Water to ſettle the Earth about their Roots; but be very careful not to water them heavily, ſo as to bear down the Plants, and keep them ſhaded in the Heat of the Day, until they have taken freſh Roots, and be ſure to refreſh them often (but gently) with Water, and give them Air in Proportion to the Heat of the Weather, covering the Glaſſes with Mats every Night, leſt the Cold chill your Beds, and ſtop the Growth of the Plants.

In the Beginning of *May* you muſt provide another hot Bed, which ſhould be covered with a deep Frame, that your Plants may have Room to grow: Upon this hot Bed, you muſt ſet as many three-penny Pots as can ſtand within the Compaſs of the Frame; theſe Pots muſt be filled with good rich Earth, and the Cavities between each Pot filled up with any common Earth, to prevent the Heat of the Bed from evaporating, and filling the Frame with noxious Steams; then, with a Trowel, or ſome ſuch Inſtrument, take up your Plants (from the the former hot Bed) with as much Earth as poſſible to the Roots, and Place each ſingle Plant in the Middle of one of the Pots, filling the Pot up with the Earth before deſcribed, and ſettle it cloſe to the Root of the Plant with your Hands; water them gently, as before, and ſhade them in the Heat of the Day from the Violence of the Sun, by covering the Glaſſes with Mats; refreſh them often with Water, and give them a good Quantity of Air in the Day-time.

In about 3 Weeks more, theſe Plants will have grown to a conſiderable Size and Strength, ſo that you muſt now raiſe the Glaſſes very much in the Day-time; and when the Air is ſoft, and the Sun clouded, draw off the Glaſſes, and expoſe them to the open Air, and repeat this as often as the Weather will permit, which will harden them by Degrees, to be removed abroad into the Places where they are to remain the whole Seaſon: But it is not adviſeable to ſet theſe out, until a Week in *July*, obſerving to do it when the Air is perfectly ſoft, and if poſſible, in a gentle ſhower of Rain.

Let them at firſt be ſet near the Shelter of a Hedge for 2 or 3 Days, to ſcreen them from the Violence of the Sun, and ſtrong Winds, to which they muſt be inured by Degrees: Theſe Plants, when grown to a good Stature, perſpire very freely, and muſt be every Day refreſhed with Water, if the Weather proves hot and dry, otherwiſe they will ſtunt, and never produce their Plumes ſo fine as they would do if taken care of.

This is the proper Management to have fine Amaranths; which, if rightly followed, and the Kinds are good, in a favourable Seaſon, will produce wonderful large fine Flowers, and are the greateſt Ornament to a good Garden for upwards of two Months: By this Method, I have had Plants 5 or 6 Feet high, with Creſts near a Foot in Breadth; and I am perſuaded, if the Kind is good, (and no Want of Dung, or Conveniencies) in a kindly Seaſon, they will grow much larger.

In the Beginning of *September*, the Amaranths will have formed their Seeds, when you muſt make Choice of the largeſt; moſt beautiful, and leaſt branching Plants of each Kind for Seed; which you ſhould remove under Shelter, (if the Weather proves wet, or the Nights froſty) that the Seeds may be maturely ripened; in the Choice, be ſure never to take any Seeds from Side Branches, nor the Neck of the Plume, but ſuch only as are produced in the Middle thereof, which in many Plants, perhaps, may be but a ſmall Quantity; but I do aſſure you, it is thoſe only you can depend upon, to have your Kinds good the ſucceeding Year.

CELSIA. *Lin. Gen. Plant.* 675. *Verbaſcum. Tourn. Inſt. R. H.* 146. This Name was given to this Plant in Honour of Dr. *Olaus Celſius*, Profeſſor of Philoſophy and Theology in the Univerſity of *Upſal*, in *Sweden*, by Dr. *Linnæus*. We have no *Engliſh* Name for it.

The *Characters* are,

It hath an obtuſe permanent Empalement, which is as long as the Petals, divided at the Top into five Parts. The Flower is of one Leaf, with a very ſhort Tube, ſpread open above, and cut into five unequal Parts; the two upper being ſmall, and the under larger. It hath four hairy Stamina, which incline toward the upper Segments of the Petal, two of which are longer than the Petal, and two are of the ſame Length, terminated by ſmall roundiſh Summits. In the Center is ſituated a roundiſh Germen, ſupporting a ſlender Style, crowned by an obtuſe Stigma. The Germen afterward becomes a roundiſh Capſule compreſſed at the Top, ſitting upon the Empalement, and hath two Cells which are filled with ſmall angular Seeds.

There is but one Species of this Genus known, *viz.*

Celsia *foliis duplicato-pinnatis. Hort. Cliff.* 321. *Celſia* with double winged Leaves. This is the *Verbaſcum orientale Sophiæ folio. Tourn. Cor.* 8. Eaſtern *Mullein* with a Flixweed Leaf.

This Plant grows naturally in *Armenia*, from whence Dr. *Tournefort* ſent the Seeds to the Royal Garden at *Paris*, where they ſucceeded, and it hath been ſince communicated to moſt Parts of *Europe*. In its natural Place of Growth, this is an Annual, but in *England* it will rarely ripen its Seeds, unleſs the Plants come up in Autumn and live through the Winter.

It ſends out many oblong Leaves, finely divided almoſt to the Mid-rib on both Sides; theſe lie flat on the Surface of the Ground, and from the Center ariſes a roundiſh herbaceous Stalk near two Feet high, garniſhed the whole Length with Leaves of the ſame Shape, but diminiſhing in their Size gradually to the Top: Theſe are placed alternately, and at the Foot Stalk of each, come out the Flowers, more than Half the Length of the Stalk, which are of an Iron Colour on their Outſide, but pale yellow within, ſpreading open like thoſe of the common *Mullein*, but not ſo regular; the ſhort Tube being turned downward, and the lower Segments being larger than the upper, and the Stamina being unequal, has occaſioned *Linnæus* to remove it to his ringent Flowers. The Seed Veſſel is round, compreſſed, and hath two Cells filled with ſmall Seeds. It flowers in *June*, and the Seeds ripen in *September*: If the Seeds are ſown on a warm dry Border as ſoon as they are ripe, the Plants will come up and live through the Winter, provided the Soil is poor, for in rich Ground they are apt to grow rank, and then they are generally deſtroyed by the early Froſts, or rot with much wet. When the Plants come up, they require no other Care but to keep them clean from Weeds, and thin them if too cloſe; for they do not bear removing well, ſo ſhould be ſown where they are intended to remain.

I have, ſometimes when the Seaſons have proved warm, had ripe Seeds from Plants ſown in the Spring; but this cannot be depended on, therefore it is much better to raiſe the Plants in Autumn.

CELTIS *Tourn. Inſt. Lin. Gen. Pl. Lotus Arbor. Raij. Meth.* The Lote or Nettle Tree, in *French Micocoulier*.

The *Characters* are,

It hath male and hermaphrodite Flowers on the ſame Tree: The hermaphrodite Flowers are ſingle, and ſituated above the male. The Empalement of the hermaphrodite Flower is divided into five Parts, in which there are no Petals, but 5 ſhort Stamina terminated by thick quadrangular Summits, which have 4 Furrows. In the Center is ſituated an oval Germen, ſupporting 2 reflexed Styles crowned by a ſingle Stigma. The Germen becomes a round Berry with one Cell, incloſing a roundiſh Nut. The male Flowers have their Empalements divided into ſix Parts, and no Germen or Style, but in other Parts like the hermaphrodite.

The *Species* are,

1. Celtis *foliis lanceolatis acuminatis, ſerratis, nervoſis.* Nettle Tree with Spear-ſhaped pointed Leaves, which are veined and ſawed on their Edges. *Celtis fructu nigricante. Tourn. Inſt.* 612. Lote Tree with a black Fruit.

2. Celtis *foliis obliquè-ovatis, ſerratis, acuminatis. Lin. Sp. Plant.* 1044. Nettle Tree with oblique, oval Leaves, which are pointed and ſawed on their Edges. This is the *Celtis fructu obſcurè purpuraſcente. Tourn. Inſt. R. H.* 612. Lote Tree with a dark purple Fruit.

3. Celtis *foliis ovato-cordatis, denticulatis, petiolis brevibus.* Nettle Tree with oval Heart-ſhaped Leaves, ſlightly indented, and ſhort Foot Stalks. This is the *Celtis orientalis minor, foliis minoribus & craſſioribus, fructu flavo. Inſt. Cor.* 42. Smaller Eaſtern Lote Tree, with ſmaller and thicker Leaves, and a yellow Fruit.

4. Celtis *foliis oblongo-ovatis, obtuſis, nervoſis, ſupernè glabris, ſubtus aureis.* Nettle Tree with oblong, oval obtuſe, nervous Leaves, which are ſmooth on their

upper Surface, and of a Gold Colour beneath. This is the *Celtis foliis Citrii ſubtus aureo, fructu rubro. Plum. Cat.* 18. Lote Tree with Citron Leaves, of a Gold Colour on their under Side, and a red Fruit.

The 1ſt Sort grows naturally in the South of *France*, in *Spain* and *Italy*, where it is one of the largeſt Trees of thoſe Countries: Yet this is not ſo plenty in *England* as the 2d, nor do I remember to have ſeen but two large Trees of this Sort in the *Engliſh* Gardens; one of which was formerly growing in the Biſhop of *London*'s Garden at *Fulham*, but was cut down ſome Years paſt, with many other curious exotick Trees, which were there growing in great Perfection: The other was in the Garden of Dr. *Uvedale* at *Enfield*, which was ſtanding a few Years ago, when I paid a Viſit to that Place; it had frequently produced Fruit, but was never propagated in this Country; nor were there any young Plants in the Gardens, till about 8 Years ago, when I procured ſome of the Fruit from *Italy*, which I communicated to ſeveral of my Friends.

This Tree riſes with an upright Stem, to the Height of 40 or 50 Feet, ſending out many ſlender Branches upward, which have a ſmooth dark coloured Bark, with ſome Spots of gray; theſe are garniſhed with Leaves placed alternately, near 4 Inches long, and 2 broad in the Middle, ending in long ſharp Points, and deeply ſawed on their Edges; having ſeveral tranſverſe Veins, which are prominent on their under Side. The Flowers come out from the Wings of the Leaves all along the Branches; they have a male and an hermaphrodite Flower, generally at the ſame Place, the male Flowers being ſituated above the others: Theſe have no Petals but a green herbaceous Empalement, ſo make no Figure; they come out in Spring, at the ſame time the Leaves make their firſt Appearance; and generally decay before the Leaves have grown to half their Magnitude. After the Flowers are paſt, the Germen of the hermaphrodite Flowers, becomes a round Berry about the Size of a Pea, which, when ripe, is black.

The 2d Sort grows naturally in *North America*: It delights in a moiſt rich Soil, in which it becomes a very large Tree. This riſes with a ſtrait Stem, which in young Trees is ſmooth, and of a dark Colour, but as they advance it becomes rougher and of a lighter Colour. The Branches are much diffuſed on every Side, garniſhed with oblique, oval Leaves, ending in long Points, and ſawed on their Edges; they are placed alternately on the Branches, with pretty long Foot Stalks. The Flowers come out oppoſite to the Leaves, upon long Foot Stalks; the male Flowers ſtanding above the hermaphrodite as in the other Species; after theſe decay, the hermaphrodite Flowers are ſucceeded by roundiſh Berries, which are ſmaller than thoſe of the firſt Sort, and when ripe, are of a dark purple Colour. This Tree flowers in *May*, and the Seeds ripen in *October*. Of this Sort there are ſeveral large Trees in the *Engliſh* Gardens, ſome of which produce great Quantities of Fruit annually, which in favourable Seaſons come to Maturity, ſo that from their Seeds Plants have been raiſed; and there are few Years, in which there is not Fruit of this Sort ſent from *America*, whereby it is now become common in the *Engliſh* Nurſeries.

This Tree is late in putting out in Spring, continues as long in Beauty in Autumn, for it is the lateſt in fading, of any of the deciduous Trees; nor do the Leaves alter their Colour long before they fall, but continue in full Verdure, till within a few Days of their dropping off; and, ſo ſoon as they begin to fall, the Trees will in few Days be quite deſtitute of Leaves, ſo that the Litter which their Leaves occaſion, may be ſooner cleared away, than that of any other deciduous Tree. There is little Beauty of the Flowers or Fruit of this Tree; but, as the Branches are well clothed with Leaves, of a fine green Colour, the Trees, when mixed with others in Wilderneſſes, make a pleaſing Variety during the Summer Seaſon. The Wood being tough and pliable, is eſteemed by Coachmakers for the Frames of their Carriages.

The 3d Sort was diſcovered by *Tournefort* in *Armenia*, who ſent the Fruit to the Royal Garden at *Paris* where they ſucceeded, and the Trees there raiſed, have produced Fruit for ſeveral Years, ſo that moſt of the curious Gardens in *Europe* have been furniſhed with it from thence.

It riſes with a Stem about 10 or 12 Feet high, dividing into many Branches, which ſpread horizontally on every Side, and have a ſmooth greeniſh Bark; they are garniſhed with Leaves about an Inch and a Half long, and near an Inch broad, inclining to a Heart-ſhape, but are oblique, one of the Ears of the Baſe being ſmaller and lower than the other; they are of a thicker Texture than thoſe of the common Sort, and of a paler green; they are placed alternate on the Branches, and have ſhort Foot Stalks; the Flowers come out from the Foot Stalks of the Leaves, as the former, and are ſucceeded by oval yellow Berries, which, when fully ripe, turn of a darker Colour. The Wood is very white.

Theſe Trees are propagated by Seeds, which ſhould be ſown ſoon after they are ripe, when they can be procured at that Seaſon; for theſe frequently come up the following Spring: whereas thoſe which are ſown in the Spring will not come up till 12 Months after; therefore it is the beſt way to ſow them in Pots or Tubs, that they may be eaſily removed; for thoſe which are ſown in the Spring, ſhould be placed in the ſhade in Summer, and conſtantly kept clean from Weeds; but in Autumn they ſhould be placed in a warm Situation, plunging the Pots into the Ground, and if they are covered over with a little Tan from a decayed hot Bed, it will prevent the Froſt from penetrating the Earth to injure the Seeds; if theſe Pots are placed on a gentle hot Bed, it will greatly forward the Vegetation of the Seeds, whereby the Plants will have more Time to get Strength before the Winter: But when the Plants appear above Ground they muſt have a large Share of Air, otherwiſe they will draw up weak; and as ſoon as the Weather is warm, they muſt be expoſed to the open Air; and, in Summer, they muſt be conſtantly kept clean from Weeds; if the Seaſon proves dry, they will require Water two or three times a Week. In Autumn it will be proper to remove the Pots, and place them under a hot Bed Frame, to ſhelter them from ſevere Froſt; or where there is not that Conveniency, the Pots ſhould be plunged into the Ground, near a Wall or Hedge; as the Plants, when young, are full of Sap, and tender, the early Froſts in Autumn frequently kill the upper Part of their Shoots;

therefore they ſhould be either covered with Mats, or a little Straw or Peas Haulm laid over them.

The following Spring the Plants ſhould be taken out out of the Seed Pots, and planted in the full Ground: This ſhould be done about the Middle or latter End of *March*, when the Danger of the Froſt is over; therefore a Bed or two ſhould be prepared (according to the Number of Plants raiſed) in a ſheltered Situation; and, in a gentle loamy Soil. The Ground muſt be well trenched, and cleared from the Roots of bad Weeds, and when levelled, ſhould be marked out in Lines at a Foot Diſtance; then the Plants ſhould be carefully turned out of the Pots, and ſeparated, ſo as not to tear their Roots, and planted in the Lines at 6 Inches aſunder, preſſing the Earth down cloſe to the Roots. If the Ground is very dry when they are planted, and no Appearance of Rain, it will be proper to water the Beds, to ſettle the Earth to the Roots; and after this, if the Surface is covered with ſome old Tan, or rotten Dung, it will keep the Ground moiſt, and prevent the drying Winds from penetrating to the Roots of the Plants.

The following Summer it will be neceſſary to keep them conſtantly clean from Weeds; but after the Plants are eſtabliſhed in the Ground, they will not require any Water, eſpecially toward the latter Part of Summer, for that will occaſion their late Growth, whereby they will be in great Danger of ſuffering by the Autumn Froſts; for the more any of theſe young Trees are ſtopped in their Growth by Drought towards Autumn, the firmer will be their Texture, ſo better able to bear the Cold.

The Plants may remain in theſe nurſery Beds, two Years, by which Time they will have obtained ſufficient Strength to be tranſplanted where they are deſigned to remain, becauſe theſe Plants extend their Roots wide every Way, ſo that if they ſtand long in the Nurſery, their Roots will be cut in removing, which will be a great Prejudice to their future Growth.

Theſe Sorts are hardy enough to thrive in the open Air in *England*, after they are become ſtrong; but for the two firſt Winters after they come up from Seeds, they require a little Protection, eſpcially the 3d Sort, which is tenderer than either of the former. The young Plants of this Sort frequently have variegated Leaves, but thoſe are more tender than the plain leaved.

The 4th Sort was firſt diſcovered by *Plumier*, in the *French* Iſlands; it was alſo found in *Jamaica*, by Dr. *Houſtoun*, who ſent the Seeds to *England*. This riſes with a ſtrait Trunk, near 20 Feet high covered with a gray Bark, divided into many Branches upward, which are garniſhed with Leaves near 4 Inches long, and two and a Half broad, rounded at their Extremity, of a thick Texture, very ſmooth on their upper Surface, and on their under Side of a lucid Gold Colour, placed alternately on the Branches. The Fruit is round and red, but the Flowers I have not ſeen.

The Seeds of this Sort rarely come up the firſt Year, ſo ſhould be ſowed in Pots, and plunged into the Tan Bed in the Stove, and remain till the Plants come up. Theſe Plants muſt be conſtantly kept in the Bark Stove, and treated as other tender Exoticks.

CENTAUREA. *Lin. Gen. Plant.* 880. *Centaurium majus. Tourn. Inſt, Jacea Tourn.* 443. *Cyanus Tourn.* 445. Greater *Centaury*, Knapweed, Blue Bottle, *&c.*

The *Characters* are,

It hath a compound Flower, whoſe Diſk is compoſed of many hermaphrodite Florets, and the Border or Rays of female Florets, which are larger and looſer: theſe are included in a common, roundiſh, ſcaly Empalement; the hermaphrodite Florets have narrow Tubes, ſwelling at the Top, and cut into five Parts; theſe have five ſhort hairy Stamina, terminated by cylindrical Summits: The Germen is ſituated under the Petal, ſupporting a ſlender Style, crowned with an obtuſe Stigma. The Germen becomes a ſingle Seed ſhut up in the Empalement. The female Florets have a ſlender Tube, but expands above, where it is enlarged, and cut into five unequal Parts; theſe are barren.

The *Species* are,

1. CENTAUREA *calycibus inermibus globoſis, ſquamis mucronatis, foliis pinnatis decurrentibus ſubtus argenteis.* *Centaury* with a globular Empalement without Spines, ſharp pointed Scales, and winged running Leaves white underneath. This is the *Centaurium foliis cinaræ. Cornut.* 72. *Centaury* with Artichoke Leaves.

2. CENTAUREA *calycibus inermibus, ſquamis ovatis obtuſis, foliis pinnatis glabris integerrimis. Hort. Cliff.* 421. *Centaury* with an Empalement without Spines, oval obtuſe Scales, and ſmooth winged Leaves, which are entire. This is the *Centaurium alpinum luteum. C. B. P.* 117. Yellow alpine *Centaury*.

3. CENTAUREA *calycibus inermibus, ſquamis ovatis, foliis pinnatis, foliolis ſerratis decurrentibus. Hort. Cliff.* 421. *Centaury* with an Empalement without Spines, oval Scales, and winged Leaves, whoſe Lobes are ſawed, and run along the Mid-rib. This is the *Centaurium majus, folio in lacinias plures diviſo. C. B. P.* 117. Greater *Centaury* with a Leaf divided into many Parts.

4. CENTAUREA *calycibus ſquamoſis, foliis indiviſis integerrimis decurrentibus. Hort. Cliff.* 121. *Centaury* with a ſcaly Empalement, and undivided entire Leaves, running along the Stalks. This is the *Centaurium majus orientale erectum, glaſti folio, flore luteo. Tourn. Cor.* 32. *Com. rar. Plant.* 39. Upright, Eaſtern, greater *Centaury* with a woad Leaf, and a yellow Flower.

5. CENTAUREA *calycibus ciliatis oblongis, foliis pinnatifidis linearibus integerrimis. Prod. Leyd.* 140. *Centaury* with oblong hairy Empalements, and winged pointed Leaves, which are very narrow, and entire. *Stæbe incana, cyano ſimilis tennifolia. C. B. P.* Hoary Stæbe with the Appearance of Blue Bottle, and a narrow Leaf.

6. CENTAUREA *calycibus ſquamoſis, foliis tomentoſis, radicalibus lanceolatis, caulinis pinnatifidis caule ſimplici. Prod. Leyd.* 142. *Centaury* with a ſcaly Empalement, woolly Leaves, thoſe near the Root being Spear ſhaped, thoſe on the Stalk pointed, and a ſingle Stalk. This is the *Centaurium majus incanum, humile, capite pini. Tourn. Inſt. R. H.* 469. Dwarf, hoary, greater *Centaury*, with a Head like a Pine Cone.

7. CENTAUREA *calycibus ſerratis, foliis lanceolatis decurrentibus, caule ſimpliciſſimo. Hort. Cliff.* 422. *Centaury* with ſawed Empalements, Spear-ſhaped running Leaves, and a ſingle Stalk. This is the *Cyanus montanus latifolius. ſ. Verbaſculum Cyanoides. C. B. P.* 273. Greater Mountain Blue Bottle with broad Leaves.

8. CENTAUREA *calycibus ſerratis, foliis lineari-lanceolatis decurrentibus, caule ſimplici.* *Centaury* with ſawed Empalements, very narrow Spear-ſhaped running Leaves,

and a ſingle Stalk. This is the *Cyanus anguſtiore folio & longiore Belgicus. H. R. Par.* Narrower and longer leaved *Belgick* Blue Bottle.

9. CENTAUREA *calycibus inermibus, ſubrotundis glabris, ſquamis ovatis, foliis ſinuatis. Hort. Cliff.* 421. *Centaury* with unarmed, roundiſh, ſmooth Empalements, oval Scales, and ſinuated Leaves. This is the *Cyanus floridus odoratus, Turcicus ſive orientalis major. Park.* Sweet oriental Cyanus, commonly called Sweet Sultan.

10. CENTAUREA *calycibus inermibus, ſubrotundis, glabris, ſquamis ovatis obtuſis, foliis laciniatis ſerratis. Centaury* with roundiſh, ſmooth, unarmed Empalements, oval obtuſe Scales, and cut Leaves, which are ſawed on their Edges. This is the *Cyanus orientalis flore luteo fiſtuloſo. Ac. R. Par.* 75. Eaſtern Cyanus with a yellow fiſtular Flower, commonly called yellow ſweet Sultan.

11. CENTAUREA *calycibus ſerratis, foliis linearibus integerrimis, infimis dentatis. Hort. Cliff.* 422. *Centaury* with ſawed Empalements, very narrow entire Leaves, indented below. This is the *Cyanus ſegetum. C. B. P.* 273. Corn Blue Bottle.

12. CENTAUREA *calycibus inermibus, ſquamis mucronatis, foliis pinnatifidis obtuſis decurrentibus. Lin. Sp. Plant.* 910. *Centaury* with unarmed Empalements, having pointed Scales, and winged pointed Leaves, which are obtuſe, running along the Stalk. *Cyanus Ægypticus flore parvo purpureo, caule alato. D. Lipp. Ægyptian* Cyanus with a ſmall purple Flower, and a winged Stalk.

13, CENTAUREA *calycibus ciliatis terminali-ſeſſilibus, foliis tomentoſis pinnatifidis, lacinulis linearibus. Hort. Cliff.* 422. *Centaury* with hairy Empalements, cloſely terminating the Stalks, woolly Leaves with winged Points, and the Segments very narrow. This is the *Jacea montana candidiſſima, Stæbes foliis. C. B. P.* 273. White Mountain Knapweed with a Stæbe Leaf.

14. CENTAUREA *calycibus ciliatis, foliis tomentoſis pinnatifidis, foliolis obtuſis ovatis integerrimis exterioribus majoribus. Hort. Cliff.* 422. *Centaury* with hairy Empalements, woolly Leaves with winged Points, the ſmall Leaves oval and obtuſe, the outer larger. This is the *Jacea arborea argentea Raguſina. Zan. Hiſt.* 107. Silvery Tree Knapweed of *Raguſa.*

15. CENTAUREA *calycibus palmato-ſpinoſis ſetis æqualibus, foliis decurrentibus ſinuatis ſpinuloſis. Prod. Leyd.* 141. *Centaury* with palmated ſpinous Empalements, whoſe Briſtles are equal, and ſinuated prickly Leaves running along the Stalks. This is the *Jacea cyanoides altera, alato caule. Herm. Par.* 189. Another Knapweed like Cyanus, with a winged Stalk.

16. CENTAUREA *calycibus ſquamoſis, foliis ovato-oblongis denticulatis integris petiolatis: Subtus tomentoſis. Hort. Cliff.* 421. *Centaury* with ſcaly Empalements, oval, oblong, indented entire Leaves, having Foot Stalks, and woolly underneath. This is the *Centaurium majus, folio helenii incano. Tourn. Inſt.* 449. Greater *Centuary* with a white Elecampane Leaf.

17. CENTAUREA *calycibus ſetaceo-ſpinoſis, foliis lanceolatis petiolatis, infernè dentatis. Hort. Cliff.* 423. *Centuary* with briſtly prickly Empalements, Spear-ſhaped Leaves, with Foot Stalks, indented beneath. This is the *Centaurium majus folio molli acuto laciniato, flore aureo magno, calyce ſpinoſo. Boerh. Ind. alt.* 1. *p.* 144. Greater *Centaury* with a ſoft, pointed, cut Leaf, and a large golden Flower, with a prickly Empalement.

18. CENTAUREA *calycibus ſquama-ciliatis, foliis pinnatifidis, pinnis lanceolatis. Lin. Sp. Plant.* 913. *Centaury* with hairy Scales to the Empalement, wing-pointed Leaves, whoſe Lobes are Spear-ſhaped. This is the *Cyanus foliis radicalibus partim integris, partim pinnatis, bracteâ calycis ovali, flore ſulphureo. Hall. Act. Phil.* 1745. Cyanus whoſe lower Leaves are partly entire, and part winged, an oval Bractea to the Empalement, and a Sulphur-coloured Flower.

19. CENTAUREA *calycibus ſquamoſis obtuſis, foliis pinnatifidis linearibus integerrimis. Centaury* with an obtuſe ſquamous Empalement, and wing-pointed, narrow, entire Leaves.

20. CENTAUREA *calycibus ciliatis, foliis pinnatifidis brevibus, caule paniculato. Centaury* with hairy Empalements, very ſhort wing-pointed Leaves, and a paniculated Stalk. This is the *Jacea orientalis perennis anguſtiſſimo & incano coronopi folio, flore purpuraſcente. Tourn. Cor.* 32. Eaſtern perennial Knapweed, with a narrow, hoary Buckſhorn Leaf, and purpliſh Flower.

There are many other Species of this Genus, preſerved in Botanick Gardens for Variety, ſome of which grow naturally in *England*, and are often troubleſome Weeds in the Fields, ſo do not deſerve a Place in Gardens; therefore I choſe not to trouble the Reader with mentioning their Titles; but have here ſelected thoſe Species, which have ſome Beauty to recommend them.

The 1ſt Sort grows naturally on the *Apenine* Mountains. This hath a perennial Root, which ſtrikes many ſtrong Roots deep in the Ground: Theſe greatly reſemble thoſe of the Artichoke, as doth alſo the lower Leaves, which are green on their upper Side, and hoary underneath; the Stalks riſe about three Feet high, garniſhed with Leaves of the ſame Form and Colour as thoſe below, but much ſmaller. The upper Part of the Stalk branches out into three or four Diviſions, each being terminated with a large ſingle Head of Flowers, of a purple Colour; theſe are compoſed of many hermaphrodite Flowers, which form the Diſk in the Center, and a Border of female Flowers which compoſe the Rays; and are all included in a common ſcaly Empalement, whoſe Scales terminate in acute Points. It flowers in *June* and *July*; but unleſs the Seaſon is very warm and dry, there are no good Seeds produced in this Country. This is uſually propagated by parting their Roots: The beſt Time for doing this is early in *October*, that the Plants may have Time to take Root before the Froſt comes on. Theſe Roots muſt not be removed or parted oftener that every 4th Year, if they are deſigned to produce ſtrong Flowers; they ſhould be planted in a dry Soil, becauſe Wet in Winter will cauſe them to rot. This Plant is never injured by Froſt, ſo may be fully expoſed in open Borders; but the Roots will require to have three Feet to ſpread, ſo they muſt not be planted too near other Plants.

The 2d Sort grows naturally on the *Alps*. This hath alſo a perennial Root, which ſtrikes deep into the Ground, ſending out a great Number of long winged Leaves, ſmooth, entire, and of a glaucous Colour; the Stalks riſe near four Feet high, and divide upward into many Parts, garniſhed with ſmall Leaves of the ſame Form as the lower; each of theſe Stalks is terminated by a ſingle Head of yellow Flowers, of the ſame Form with thoſe of the firſt, but not more than half their Size; this alſo flowers at the ſame Time, and in dry Seaſons will perfect Seeds in Autumn. It may be propagated by parting the Roots as the firſt; the Plants require the ſame Treatment.

The 3d Sort ſtands in the Liſt of medicinal Plants of the College, but is very rarely uſed; the Root is reckoned aſtringent, and good for all Kinds of Fluxes, and of great uſe to heal Wounds. This grows naturally on the Mountains in *Italy* and *Spain*; it hath a ſtrong perennial Root, like the two former Sorts, from which come out a great Number of long winged Leaves, which ſpread wide on every Side; theſe are of a lucid green, and ſawed on their Edges; the Flower Stalks are ſlender, but very ſtiff, and divide upward into many ſmaller, which riſe five or ſix Feet high, having at each Joint, one ſmall winged Leaf, of the ſame Form with the other: Each of theſe Stalks is terminated by a ſingle Head of purpliſh Flowers, which are conſiderably longer than the Empalement. This Sort flowers in *July*, and in warm dry Seaſons will produce ripe Seeds in *England*. It may be propagated by parting the Roots as the former Sort, and the Plants treated the ſame way, but ſhould have more Room to grow; therefore not ſo proper for ſmall Gardens; but in large open Borders, or to intermix in open Quarters with other tall growing Plants, this will make a Variety.

The 4th Sort was diſcovered by *Tournefort*, in the *Levant*, who ſent the Seeds to the Royal Garden at *Paris*, and from thence it hath been communicated to moſt of the curious Gardens in *Europe*. This hath a perennial Root, which ſtrikes deep into the Ground, from which ſprings up a great Tuft of long entire Leaves, ſhaped like thoſe of Woad, and grow upright; there are alſo many upright Stalks, which riſe near five Feet high, garniſhed with Leaves coming out ſingle at each Joint, of the ſame Shape as the under, but leſs, and have a Border or Wing, running along the Stalk from one to the other. The upper part of the Stalk divides into two or three ſmaller, each of which is terminated by a ſingle Head of yellow Flowers, included in a ſilvery ſcaly Empalement. This flowers in *July*, but rarely produces good Seed in *England*. It may be propagated by parting the Roots as the former, and the Plants treated the ſame way, being equally hardy; as this doth not ſpread ſo much as the two laſt, it may be allowed a Place in ſmaller Gardens.

The 5th Sort grows naturally in *Auſtria*. This hath a perennial Root, from which come out in Spring, many winged Leaves, which are hoary, and the Segments narrow and entire; the Stalks riſe near three Feet high, dividing into ſeveral Branches, which have a ſingle winged Leaf at each Joint, of the ſame Shape with the other; at the End of each Stalk is one Head of purple Flowers, incloſed in an oblong ſcaly Empalement, each Scale being bordered with ſmall Hairs, like an Eye Brow. The Flowers appear in *June*, and the Seeds ripen in *Auguſt*. This is propagated by Seeds, which may be ſown in a Bed of common Earth, in a Nurſery; and when the Plants come up, they muſt be thinned, and kept clear from Weeds, and the following Autumn may be tranſplanted where they are deſigned to remain; after which they require no further Care. Two or three of theſe Plants may be allowed a Place in Gardens where there is Room, for the Sake of Variety.

The 6th Sort grows naturally in the South of *France*, and in *Italy*: I received the Seeds from *Verona*. It hath a perennial Root, which doth not divide and ſpread as the former, but grows ſingle, ſending out, in the Spring, ſeveral entire Spear-ſhaped Leaves, and afterward a ſingle Stalk, more than a Foot high, which is garniſhed at each Joint with one divided hoary Leaf; and at the Top comes out a ſingle, large, ſcaly Head, ſhaped like a Cone of the Pine Tree, very taper at the Top, where it cloſely ſurrounds the Florets, whoſe Tops juſt peep out of the Empalement: They are of a bright purple Colour, and appear in *June*, but are not ſucceeded by Seeds in *England*, ſo cannot be propagated, unleſs the Seeds are procured from abroad. Theſe Seeds may be ſown, and the Plants afterward treated as the laſt.

The 7th Sort is the common perennial Blue Bottle, by ſome titled Batchelors Button. This is ſo well known as to need no Deſcription; the Roots creep under Ground, to a great Diſtance, whereby the Plant propagates too faſt, and is often troubleſome in Gardens. It flowers in *May* and *June*, and grows in any Soil or Situation.

The 8th Sort differs from the 7th in having much longer and narrower Leaves, not ſo white, and the Heads of Flowers are ſmaller; but whether this is only a Variety from the other, I cannot determine, having never raiſed either from Seeds; for theſe Plants ſpread very much by their creeping Roots, which renders them barren, as many other creeping rooted Plants are, few of which produce Seeds: However, this Plant has always retained its Difference, from the Year 1727, when I firſt brought it to *England*; and as it propagates ſo faſt, it is now become almoſt as plenty in the Gardens, as the common broad leaved Sort. This is equally hardy, ſo may be planted in any Soil or Situation, where many other Sorts will not thrive, and during its Continuance in Flower will make a Variety in the Garden.

The 9th Sort is annual. This hath been many Years propagated in the *Engliſh* Gardens, under the Title of Sultan Flower, or ſweet Sultan. It was brought from the *Levant*, where it grows naturally in arable Land, among the Corn. This ſends up a round channelled Stalk, near three Feet high, which divides into many Branches, garniſhed with jagged Leaves, of a pale green, ſmooth, and ſtand cloſe to the Branches; from the Side of the Branches come out long naked Foot Stalks, each ſuſtaining a ſingle Head of Flowers ſhaped like thoſe of the other Species, which have a very ſtrong Odour, ſo as to be offenſive to many People, but to others very grateful. The Empalement of theſe is ſcaly, round, and without Spines; the Flowers are in ſome purple, and others white, and likewiſe a Fleſh Colour between, which hath come from the ſame Seeds. There is a Variety of this with fiſtular Flowers; and another with fringed Flowers, commonly called *Amberboi* or *Emberboi*; but theſe have degenerated to the common Sort in a few Years, although I have ſaved the Seeds with great Care. Theſe Seeds are commonly ſown upon a hot Bed in Spring, to bring the Plants forward, and in *May* they are tranſplanted into the Borders of the Flower Garden; but if the Seeds are ſown on a warm Border in Autumn, they will live through the Winter; and theſe Plants may be removed in the Spring into the Flower Garden, which will be ſtronger, and come earlier to flower, than thoſe which are raiſed in Spring. The Seeds may alſo be ſown in the Spring on a common warm Border, where the

Plants will riſe very well, but theſe will be later in flowering than either of the other. The autumnal Plants will begin to flower the Middle of *June*, and will continue flowering till *September*; and the Spring Plants will flower a Month later, and continue till the Froſt ſtops them. Their Seeds ripen in Autumn.

The 10th Sort has been ſuppoſed to be only a Variety of the former, which is a great Miſtake; for although there is a great Similitude in their Appearance, yet they are ſpecifically different, ſo never alter. I have cultivated this Sort upwards of thirty Years, and have never obſerved the leaſt Variation in it. This is much tenderer than the former, ſo the Seeds muſt be ſown on a hot Bed in Spring; and when the Plants are fit to remove, they ſhould be tranſplanted on a freſh hot Bed, to bring them forward: When they have taken Root in this Bed, they muſt have Air admitted every Day, to prevent their drawing up weak, and refreſhed with Water ſparingly, becauſe they are very apt to rot with much Wet. When the Plants have obtained Strength, they muſt be carefully taken up, and planted in ſeparate Pots, filled with light Earth, and ſome of them placed in the Shade till they have taken Root; then they may be placed with other annuals in the Pleaſure Garden, where they will continue long in Beauty. But as the Plants which are placed in the open Air, rarely produce good Seeds, there ſhould be two or three Plants kept in a moderate hot Bed, under a deep Frame, where they will come earlier to flower; and being protected from Wet and Cold, will ripen their Seeds every Year; which is the ſureſt Method to preſerve the Sort.

This Sort differs from the common, in its Leaves being ſawed on the Edges, the Flowers fiſtular, of a bright yellow, and have a very agreeable ſoft Odour. It flowers in *July* and *Auguſt*, and the Seeds ripen in *October*.

The 11th Sort is the common Blue Bottle, which grows naturally amongſt the Corn in moſt Parts of *England*; this ſtands in the Liſt of medicinal Plants; there is a diſtilled Water of the Flowers, which is eſteemed good for the Eyes. There are great Varieties of Colours in theſe Flowers, ſome of which are finely variegated: The Seeds are ſold by Seedſmen by the Title of Bottles of all Colours. Theſe are annual Plants, which will riſe in any common Border, and require no Care but to keep them clean from Weeds, and thinned where too cloſe, for they do not thrive well when tranſplanted. If the Seeds are ſown in Autumn they ſucceed better, and the Plants flower ſtronger than thoſe which are ſown in Spring.

The Seeds of the 12th Sort were ſent me from Dr. *Lippi*, at *Grand Cairo*. This is an annual Plant, which riſes near 2 Feet high, ſending out 2 or 3 Branches toward the Top; the Leaves are divided into many obtuſe Parts, and have a Border running along the Stalk; the Flowers are ſmall, of a bright purple, and have a ſcaly Empalement. If the Seeds are ſown in Spring on a Border of light Earth, where the Plants are to remain, they will require no farther Care but to keep them clean from Weeds. It flowers in *July*, and the Seeds ripen in Autumn.

The 13th Sort is perennial, and retains its Leaves through the Year. This grows naturally in *Italy*, on the Borders of the Fields. The Leaves are hoary, and divided into many narrow Segments; the Stalks riſe near 3 Feet high, branching upward into many Diviſions, each being terminated by a Head of purple Flowers; theſe come out in *June*, and in favourable Seaſons will perfect Seeds in Autumn. This Sort will live abroad in moderate Winters, in a warm Situation and dry Soil, but in ſevere Winters are commonly killed; ſo one or two of them may be ſheltered under a common Frame in Winter to preſerve the Kind. It may be eaſily propagated by Seeds, as the 5th Sort, or if the young Branches, which do not ſhoot up to flower, are cut off, and planted in a ſhady Border any Time in Summer, they will take Root, and in Autumn may be removed to warm Borders, or put into Pots to be ſheltered in Winter.

The 14th Sort grows naturally in *Mauritania*, and other Places on the Borders of the *Mediterranean Sea*. This ſeldom riſes more than 3 Feet high in this Country; it hath a perennial Stalk, which divides into many Branches, garniſhed with very white woolly Leaves, divided into many obtuſe Lobes, which are entire; the ſmall Leaves, or Lobes, on the exterior Part of the Leaf, being the largeſt. The Flowers are produced from the Side Branches, upon ſhort Foot Stalks, of a bright yellow, and are included in a fine hairy Empalement. Theſe appear in *June* and *July*, but ſcarce ever are ſucceeded by Seeds in *England*. It is propagated by planting the young Shoots as the laſt, and the Plants require Protection from hard Froſt. But if they are planted in dry Lime Rubbiſh, where they will not grow luxuriant, they will reſiſt the Cold of our ordinary Winters in the open Air. As this Plant retains its Leaves all the Year, which are extremely white, it makes a pretty Variety in a Garden.

The 15th Sort is annual. This grows naturally in the *Archipelago*. It riſes with a branching Stalk, about 3 Feet high; the lower Leaves are not much unlike thoſe of the Turnep, being rounded at their Ends, and their Baſe is cut into many Parts; thoſe upon the Stalks and Branches are nearly of the ſame Form, but diminiſh gradually in their Size to the Top; theſe have a Border or Wing running along the Stalks, which connect them together; the Flowers are produced at the End of the Branches, which have prickly Empalements; the Spines come out from the Border of the Scales, divided like the Fingers of a Hand. The Flowers are of a bright purple, ſo make a pretty Appearance. This Sort may be treated in the ſame Matter as the Corn Bottle, by ſowing the Seeds in Autumn, and keeping the Plants clean from Weeds. They flower in *June*, and the Seeds ripen in *Auguſt*: If ſome Seeds are ſown in Spring, the Plants will flower a Month after the others, and continue flowering till the Froſt ſtops them; but theſe do not always perfect Seeds; ſo that from the autumnal Plants the Seeds will more certainly be procured.

The 16th Sort grows naturally upon the *Helvetian* Mountains. I received the Seeds of this from *Verona*. It hath a perennial Root, and an annual Stalk; the Leaves are oblong, ſlightly indented on their Edges, and woolly on their under Side; theſe much reſemble thoſe of Elecampane, generally ſtanding upright; the Stalks riſe little more than a Foot high, and are terminated by large ſingle Heads of purple Flowers, incloſed in ſcaly Empalements; theſe appear in *July*, but unleſs the Seaſon proves very dry and warm, no Seeds ſucceed them in this Country; ſo that this, like the 6th Sort, is very difficult to propagate in *England*, unleſs good Seeds can be procured from the Countries where it naturally grows. It is very hardy, ſo may be treated in the ſame Manner as any of the former perennial Sorts, but will require a little more Room than the ſixth.

The 17th Sort grows naturally in *Auſtria*, and *Hungary*, from whence I received the Seeds. The lower Leaves of this Plant ſpread flat on the Ground; they are ſoft, hairy, and end in ſharp Points; but toward their Baſe, are cut into ſeveral narrow Segments; the Stalks riſe near 3 Feet high, garniſhed at each Joint by Spear-ſhaped Leaves, which are entire, and terminated by ſingle large Heads of Flowers, of a Gold Colour, incloſed in a prickly ſcaly Empalement. This flowers in *July* and *Auguſt*, but never produces Seeds in this Country. It hath a perennial Root, which ſends out Offſets, theſe may be taken from the old Plants in Autumn, whereby it may be eaſily propagated. It is very hardy in reſpect to Cold, but ſhould have a dry Soil, the Roots being very apt to rot in Winter with much Wet.

The 18th Sort grows naturally in *Siberia*. The Seeds of this were ſent me from *Peterſburgh*. This ſends out many long winged Leaves, which are divided into ſeveral Spear-ſhaped Lobes; the Stalks riſe near 5 Feet high, and divide upward into many ſmaller Branches, garniſhed with Leaves of the ſame Form with the lower, but much ſmaller, and the Segments very narrow; each of theſe is terminated by a Head of yellow Flowers, incloſed in a ſcaly Empalement; the Borders of the Scales are ſet with fine Hairs like an Eye Brow. It flowers in *June*, *July*, and *Auguſt*, and the Seeds ripen in Autumn. This hath a perennial Root, and an annual Stalk, which, with the Leaves, decay in Autumn, and riſe new from the Root in Spring. It may be propagated either by Seeds, or parting the Roots, in the ſame Manner as the 6th Sort; the Plants require a large Share of Room, ſo ſhould not be planted too near other Plants; therefore it is not proper for ſmall Gardens.

The 19th Sort grows naturally in *Zant*, from whence the Seeds were ſent me. This is an annual Plant, which riſes with a ſlender Stalk, a Foot and a Half high, garniſhed with wing-pointed Leaves, very narrow, and a little hoary; the Flowers are ſmall, of a purple Colour, and are incloſed in an obtuſe ſcaly Empalement. Theſe appear in *July*; but unleſs the Seaſon proves very favourable, the Seeds will not ripen in *England*.

The 20th Sort came alſo from *Zant*. This hath a perennial Root and annual Stalk; the Leaves winged, very narrow, and hoary; the Stalk riſes a Foot high, garniſhed with ſmall Leaves of the ſame Form; the Flowers are purple, incloſed in ſcaly Empalements. It flowers in *July*, but ſeldom ripens Seeds in *England*. This muſt have a dry Soil, and a warm Situation.

CENTAURIUM MINUS. *See* Gentiana.

CENTINODIUM, Knot Graſs. *See* Polygonum.

CEPA. The Onion.

The Varieties of the common Onion are,

The *Straſburgh*. This is the *Cepa oblong. C. B. P.* 71.

The *Spaniſh* Onion. This is the *Cepa vulgaris, floribus & tunicis purpuraſcentibus. C. B. P.* 71.

The white *Egyptian* Onion. This is the *Cepa floribus & tunicis candidis. C. B. P.* 71.

All theſe vary from Seeds, ſo that there are ſeveral intermediate Differences, not worth enumerating.

Theſe three Varieties are propagated by Seeds, which ſhould be ſown the latter End of *February*, or Beginning of *March*, on good, rich, light Ground, which ſhould be well dug, levelled, and cleared from the Roots of all bad Weeds; then the Seeds ſhould be ſown, in a dry Time, when the Surface of the Ground is not moiſt; and where they are intended for a Winter Crop, they muſt not be ſown too thick. The common Allowance of Seed is ſix Pounds to one Acre; but the generality of Gardeners ſow more; becauſe many of them allow for a Crop to draw out, which they call Cullings; theſe are all ſuch as want to be removed from the others, which are thinned out young, and tied in Bunches for the Market; but thoſe who Regard their principal Crop, never practiſe this; therefore ſow no more Seeds than is ſufficient, which is the Quantity before mentioned: For when the Plants come up cloſe, they draw each other weak; and when this happens, their Roots never grow ſo large as thoſe which are thin: Beſides, there is a greater Trouble in hoeing them; and when they are thinned for the Market, the Ground is troden over, and the Onions which are to ſtand, have their Leaves bruiſed whereby they are greatly injured; ſo that where young Onions are wanted, it is a much better way to ſow ſome ſeparate Beds for this Purpoſe, than to injure the future Crop.

In about ſix Weeks after ſowing, the Onions will be up forward enough to hoe; at which Time (chooſing dry Weather) you ſhould, with a ſmall Hoe about two Inches and a Half broad, cut up lightly all the Weeds from amongſt the Onions; and alſo cut out the Onions, where they grow too cloſe in Bunches, leaving them at this firſt Hoeing, at leaſt two Inches apart. This, if well performed, and in a dry Seaſon, will preſerve the Ground clear of Weeds, at leaſt a Month; when you muſt hoe them over a ſecond time, cutting up all the Weeds, as before, and alſo cut out the Onions to a larger Diſtance, leaving them this time 3 or 4 Inches aſunder. This alſo, if well performed, will preſerve the Ground clean a Month or ſix Weeks longer, when you muſt hoe them over the third and laſt Time.

Now you muſt carefully cut up all Weeds, and ſingle out the Onions to near 6 Inches ſquare; by which they will grow much larger than if left too cloſe. This Time of hoeing, if the Weather proves dry, and it is well performed, will keep the Ground clean until the Onions are fit to pull up; but if the Weather ſhould prove moiſt, and any of the Weeds ſhould take Root again, you ſhould, about a Fortnight or 3 Weeks after, go over the Ground, and draw out all the large Weeds with your Hands; for the Onions having now begun to bulb, they ſhould not be diſturbed with a Hoe.

Toward the Middle of *Auguſt*, your Onions will have arrived to their full Growth, which may be known by their Blades falling to the Ground, and ſhrinking; you ſhould therefore, before their Necks or Blades are withered off, draw them out of the Ground, croping off the extreme Part of the Blade, and lay them abroad upon a dry Spot of Ground to dry, obſerving to turn them over every other Day at leaſt to prevent their ſtriking freſh Root into the Ground; which they will ſuddenly do, eſpecially in moiſt Weather.

In about a Fortnight's Time your Onions will be dry enough to houſe, which muſt be performed in perfect dry Weather; in doing this, you muſt carefully rub off all the Earth, and be ſure to mix no faulty ones among them, which will in a ſhort Time decay, and ſpoil all thoſe that lie near them; nor ſhould you lay them too thick in the Houſe, which would occaſion their ſweating, and thereby rot them; theſe ſhould not be put in a lower Room, or Ground Floor, but in a Loft or Garret; and the cloſer they are kept from the Air, the better they will keep. You ſhould, at leaſt, once a Month look over them to ſee if any are decayed; which if you find, muſt be immediately taken away, for they will infect all that lie near them.

But notwithſtanding all the Care you can poſſibly take in drying and houſing your Onions, many of them will grow in the Loft, eſpecially in mild Winters, which are generally moiſt; therefore thoſe who would preſerve them late in the Seaſon, ſhould ſelect a Parcel of the firmeſt and moſt likely to keep, and with a hot Iron ſlightly ſinge their Roots, which will effectually prevent their ſprouting, but in doing this great Caution muſt be uſed not to ſcorch the Pulp of the Onions, for that will cauſe them to periſh ſoon after.

The beſt Onions for keeping are the *Straſburg* Kind, which is an oval-ſhaped Bulb; but this ſeldom grows ſo large as the *Spaniſh*, which is flater; the white Sort is eſteemed the ſweeteſt; but theſe Varieties are not laſting; for if you ſave Seeds of white Onions only, you will have a Mixture of the red among them; nor will the *Straſburg* keep long to its Kind, but will by Degrees grow flater, as do the large *Portugal* Onions, when planted in our Climate, which, in a Year or two, will ſo far degenerate as, not to be known they were from that Race.

But in order to ſave Seeds, make Choice in the Spring of ſome of the firmeſt, largeſt, and beſt ſhaped Onions (in Quantity proportionable to the Seed you intend to ſave); and having prepared a Piece of good Ground (which ſhould be well dug, and laid out in Beds about 4 Feet wide), in the Beginning of *March* plant your Onions in the following Manner. Having ſtrained a Line about 4 Inches within the Side of the Bed, you muſt, with a Spade, throw out an Opening about 6 Inches deep, the Length of the Bed, into which you ſhould place the Onions, with their Roots downward, at about 9 Inches Diſtance from each other; then with a Rake draw the Earth into the Opening again to cover the Bulbs; then proceed to remove the Line again a Foot farther back, where you muſt make an Opening as before, and ſo again till the Whole is finiſhed, ſo you will have 4 Rows in each Bed, between which you muſt allow a Space of 2 Feet for an Alley to go among them to clear them from Weeds, *&c.* In a Month's Time their Leaves will appear above Ground, and many of the the Roots will produce 3 or 4 Stalks each; you muſt therefore keep them diligently cleared from Weeds, and about the Beginning of *June*, when the Heads of the Flowers begin to appear upon the Tops of the Stalks, you muſt provide a Parcel of Stakes about 4 Feet long, which ſhould be driven into the Ground, in the Rows of Onions, at about 6 or 8 Feet apart, to which you ſhould faſten ſome Packthread, Rope Yarn, or ſmall Cord, which ſhould be run on each Side the Stems of the Onions, a little below their Heads, to ſupport them from breaking down with the Wind and Rain, for when the Seeds are formed, the Heads will be heavy, and ſo are very often broken down by their own Weight, where they are not well ſecured, and if the Stalks are broken before the Seeds have arrived to Maturity, they will not be near ſo good, or keep ſo long as thoſe which are perfectly ripened.

About the End of *Auguſt* the Onion Seed will be ripe, which may be known by its changing brown, and the Cells in which the Seeds are contained opening; ſo that if it be not cut in a ſhort Time, the Seeds will fall to the Ground; when you cut off the Heads, they ſhould be ſpread abroad upon coarſe Cloths in the Sun, obſerving to keep it under Shelter in the Night, and in wet Weather: when the Heads are quite dry, you muſt beat out the Seeds, which are very eaſily diſcharged from their Cells; then having cleared it from all Huſk, *&c.* after having expoſed it one Day to the Sun to dry, put it up in Bags to preſerve it for Uſe.

The Directions here given are for the general Crop of Winter Onions, but there are two other Crops of this common Sort of Onion, cultivated in the Gardens about *London* to ſupply the Market, one of which is commonly called *Michaelmas* Onions. Theſe are ſown in Beds pretty cloſe, the Beginning of *Auguſt*, and muſt be well weeded when they come up. In the Spring of the Year, after the Winter Onions are over, they are tied up in Bunches to ſupply the Markets; but from the thining of theſe, they carry to Market young green Onions in *March*, for Sallads, *&c.*

In the Spring they ſow more Beds in the ſame Manner, to draw up young for Sallads, after the *Michaelmas* Onions are grown too large for that Purpoſe, and where a Supply of theſe are required, there may be three different Sowings, at about three Weeks diſtant from each other, which will be ſufficient for the Seaſon.

There are alſo the following Sorts of Onions cultivated in the Kitchen Gardens.

The *Shallot*, or *Eſchalottes*, which is the *Cepa Aſcalonica. Matth.* 556.

The *Ciboule*, or *Cepa fiſſilis. Matth. Lugd.* 1539.

The *Cives*, or *Cepa ſectilis juncifolia perennis. Mor.*

The *Welch* Onion I ſuppoſe to be the ſame with the *Ciboule*, for I have ſeveral Times received the *Ciboule* from Abroad, which, when planted, proved to be what is generally known here by the Title of *Welch* Onions. There is alſo a great Affinity between the *Eſchalottes* and theſe, ſo that they are not well diſtinguiſhed yet, for although they are generally cultivated in Gardens, yet they are not well known to Botaniſts, ſome of whom have ſuppoſed a greater Variety than is in Nature, while others have joined them together.

The Scallion, or Eſcallion, is a Sort of Onion which never forms any Bulbs at the Roots, and is chiefly uſed in Spring for green Onions, before the other Sorts, ſown in *July*, are big enough; but this Sort of Onion, how much ſoever in Uſe formerly, is now ſo ſcarce as to be known to few, and is rarely to be met with, except in curious Botanic Gardens: the Gardeners near *London* ſubſtitute another Sort for this, which are thoſe Onions which decay and ſprout in the Houſe: Theſe they plant in a Bed early in Spring, which in a ſhort Time will grow large enough for Uſe; when they draw them up, and after pulling off all the outer Coat of the Root, they tie them up in Bunches, and ſell them in the Market for Scallions.

The true Scallion is eaſily propagated by parting the Roots, either in Spring or Autumn, but the latter Seaſon is preferable, becauſe of their being rendered more fit for Uſe in Spring; theſe Roots ſhould be planted 3 or 4 in a Hole, at 6 Inches Diſtance every Way, in Beds or Borders 3 Feet wide, which in a ſhort Time will multiply exceedingly, and will grow in almoſt any Soil and Situation; their being ſo hardy as to reſiſt the ſevereſt of our Winters, and being green, and fit for Uſe ſo early in the Spring, renders them worthy of a Place in all good Kitchen Gardens.

The Cives are a very ſmall Sort of Onion, which never produces Bulbs, and ſeldom grows above 6 Inches high in the Blade, which is very ſmall and ſlander, and are in round Bunches; this was formerly much uſed for Sallads in Spring, as being milder than thoſe Onions which had ſtood thro' the Winter; theſe are propagated by parting their Roots like the former, are alſo very hardy, and will be fit for Uſe early in Spring.

The *Welch* Onions are only propagated for Spring Uſe alſo; theſe never make any Bulb, and are therefore only fit to be uſed green for Sallads, *&c.* They are ſown about the End of *July*, in Beds of about 3 Feet and a Half wide, leaving Alleys of 2 Feet broad to go between the Beds to clean them; in a Fortnight they will appear above Ground, and muſt be carefully cleared from Weeds; towards the Middle of *October* their Blades will die away, and the whole Spot ſeem naked, which hath led many to dig up the Ground again, ſuppoſing the Crop totally loſt; whereas, if they ſtand undiſturbed, they will come up again very ſtrong in *January*, and from that Time grow vigorouſly, reſiſting all Weathers, and by *March* will be fit to draw for young Onions; they are, in the Markets, more valued than any other Sort at that Seaſon, extremely green and fine, though much ſtronger than the common Onion in Taſte, approaching nearer Garlick, which hath occaſioned their being leſs eſteemed for the Table: but as no Winter, however hard, will hurt them, it is proper to have a few to ſupply the Table, in Caſe the common Sort ſhould be deſtroyed by Froſts.

The Roots of theſe Onions, if planted out at 6 or 8 Inches Diſtance, in *March*, will produce ripe Seeds in Autumn, but it will be in ſmall Quantities the firſt Year, therefore the ſame Roots ſhould remain unremoved, which the 2d and 3d Year will produce many Stems, and afford a good Supply of Seeds; theſe Roots will abide many Years good, but ſhould be tranſplanted and parted every 2d or 3d Year, which will cauſe them to produce ſtrong Seeds.

CEPHALANTHUS. *Lin. Gen. Plant.* 105. *Platanocephalus. Vaill. Acad. R. Scien.* 1722. Button Wood.

The *Characters* are,

It hath a Number of ſmall Flowers, which are collected into a ſpherical Head; theſe have no common Empalement, but each particular Flower hath a Funnel-ſhaped Empalement, divided into four Parts at the Top; the Flower is Funnel-ſhaped, of one Petal, divided at the Top into four Parts, incloſing four Stamina, which are inſerted in the Petal, and are ſhorter than the Tube, being terminated by globular Summits. The Germen is ſituated under the Flower, ſupporting a Style, which is longer than the Petal, and is crowned by a globular Stigma; the Germen becomes a globular hairy Capſule, incloſing one or two oblong angular Seeds; theſe are joined to an Axis, and form a round Head.

The *Species* are,

1. CEPHALANTHUS *foliis oppoſitis terniſque. Flor. Virg.* 15. Button Tree with Leaves growing oppoſite by threes. This is the *Scabioſa dendroides Americana ternis foliis caulem ambientibus, floribus ochroleucis. Pluk. Alm.* 336. Tree-like *American Scabioſe* with three Leaves ſurrounding the Stalk, and yellowiſh white Flowers.

2. CEPHALANTHUS *foliis oppoſitis. Flor. Zeyl.* 53. *Cephalanthus* with Leaves growing oppoſite. This is the *Platanocephalos citrii foliis bijugis, capite majore. Vaill. Acad. R. Scien.* 1722. Button Tree with Citron Leaves joined together, and a larger Head.

The 1ſt Sort grows naturally in *North America*, from whence the Seeds are annually ſent to *Europe*, and of late great Numbers of the Plants have been raiſed in the Gardens of the Curious; but there are no very large Plants in the *Engliſh* Gardens; the largeſt I have ſeen are in the curious Gardens of his Grace the Duke of *Argyle*, at *Whitton*, near *Hounſlow*, where they thrive better than in almoſt any other Place where they have been planted, ſo that in a moiſt Soil they will do the beſt.

This ſeldom riſes higher than 6 or 7 Feet in this Country. The Branches come out by Pairs, oppoſite at each Joint; the Leaves alſo ſtand oppoſite, ſometimes by Pairs, and at others, 3 ariſe at the ſame Joint, ſtanding round the Branch; theſe are near 3 Inches long, and one and a Quarter broad, having a ſtrong Vein running longitudinally through the Middle, and ſome ſmall tranſverſe Veins from that to the Borders; they are of a light green, and their Foot Stalks change to a reddiſh Colour next the Branches; the Ends of the Branches are terminated by looſe Spikes of ſpherical Heads, about the Size of a Marble, each of which are compoſed of many ſmall Flowers, by Funnel-ſhaped, of a whitiſh yellow Colour, faſtened to an Axis which ſtands in the Middle; theſe appear in *July*, and, in warm Seaſons, are ſucceeded by Seeds, which have ſometimes ripened in *England*.

Theſe Plants are propagated chiefly by Seeds (though there has been ſome raiſed from Cuttings) theſe ſhould be ſown in Pots, for the greater Conveniency of removing them into a ſhady Situation, or where they may have Shelter. If the Seeds can be procured ſo early as to ſow them before *Chriſtmas*, the Plants will come up the following Summer; but if they are ſown in Spring, they generally remain a Year in the Ground; in ſuch Caſe, the Pots ſhould be placed in the Shade that Summer, and placed the Autumn following under a common Frame to ſhelter them from Froſt, and the Spring following the Plants will come up.

The 1ſt Year, when the Plants come up, it is neceſſary to ſhade them in hot dry Weather, while they are young; at which Time they are often deſtroyed by being too much expoſed; nor ſhould the Watering be neglected; for as theſe Plants naturally grow on moiſt Ground, when they are not duly watered in dry Weather, the young Plants languiſh and decay.

The next Autumn, when the Leaves begin to drop, the young Plants may be tranſplanted into Nurſery Beds, which ſhould be a little defended from cold Winds; and, if the Soil is moiſt, they will ſucceed much better than in dry Ground; but where it happens otherwiſe, it will be abſolutely neceſſary to water them in dry Weather, otherwiſe there will be great Danger of the Plants dying in the Middle of Summer, which has been the Caſe in many Gardens where theſe Plants were raiſed.

In theſe Nurſery Beds the Plants may remain a Year or two (according to the Progreſs they have made, or the Diſtance they were planted); then they may be taken up in *October*, and tranſplanted where they are to remain. I have mentioned but one Seaſon for tranſplanting them, yet this may alſo be performed in Spring, eſpecially if the Ground is moiſt into which they are removed, or the Plants are duly watered if the Spring ſhould prove dry, otherwiſe there will be more Hazard of their growing when removed at this Seaſon.

Theſe Plants make a pretty Variety among other hardy Trees and Shrubs, being extreme hardy in reſpect to Cold; but they delight in a moiſt light Soil, where they will grow very faſt, and their Leaves will be larger than in dry Land.

The 2d Sort grows naturally in *Africa*, alſo in *India*; but is very rare in the *Engliſh* Gardens; this in the natural Places of its Growth, it becomes a large Tree, but the Plants which are in *Europe*, make but little Progeſs. It is tender when young, ſo requires a Stove to preſerve it through the Winter; but after it obtains Strength, will live in a good Green-houſe. It is very difficult to propagate here, which occaſions its Scarcity.

CERASTIUM. *Lin. Gen. Plant.* 518. *Myoſotis. Tourn. Inſt. R. H.* 244. *Tab.* 126. Mouſe-ear, or Mouſe-ear Chickweed, in *French*, *Oreille de Souris*.

The *Characters* are,

It hath a permanent five-leaved Empalement, which ſpreads open; the Flower hath five obtuſe bifid Petals, which are as large as the Empalement. It hath ten ſlender Stamina, ſhorter than the Petals, and terminated by roundiſh Summits. In the Center is ſituated an oval Germen, from which ariſe five Styles, which are hairy, erect, and crowned with obtuſe Stigmas; the Empalement afterward, becomes an oval cylindrical, or globular Capſule with one Cell, opening at the Top, containing many roundiſh Seeds.

The *Species* are,

1. Cerastium *foliis lanceolatis, pedunculis ramoſis, capſulis ſubrotundis. Lin. Sp. Plant.* 439. *Ceraſtium* with Spear-ſhaped Leaves, branching Foot Stalks, and roundiſh Capſules. *Myoſotis incana repens. Tourn.* Hoary creeping Mouſe-ear, by ſome called Sea Pink.

2. Cerastium *foliis oblongis, tomentoſis, pedunculis ramoſis, capſulis globoſis. Lin. Sp. Plant.* 440. *Ceraſtium* with oblong woolly Leaves, branching Foot Stalks, and globular Capſules. This is the *Myoſotis tomentoſa, linariæ folio anguſtiore. Tourn. Inſt. R. H.* 245. Woolly Mouſe-ear with a narrow Toad-flax Leaf.

3. Cerastium *foliis lanceolatis, caule dichotomo ramoſiſſimo, capſulis erectis. Prod. Leyd.* 450. *Ceraſtium* with Spear-ſhaped Leaves, a very branching Stalk divided in twos, and upright Capſules. This is the *Myoſotis Hiſpanica ſegetum. Tourn. Inſt. R. H.* 245. *Spaniſh* Corn Mouſe-ear, or Horned Chickweed.

4. Cerastium *floribus pentandriis, petalis integris. Lin. Sp. Plant.* 438. *Ceraſtium* with Flowers having five Stamina, and entire Petals.

5. Cerastium *foliis connatis. Hort. Cliff.* 173. *Ceraſtium* whoſe Leaves are joined. This is the *Myoſotis Orientalis perfoliata folio lychnidis. Tourn. Cor.* 18. Eaſtern perfoliated Mouſe-ear with a Lychnis Leaf.

The 1ſt Sort grows naturally in *France* and *Italy*, and was formerly cultivated in the *Engliſh* Gardens under the Title of Sea Pink; it was planted as an Edging to keep up the Earth of Borders, before the Dwarf Box was brought to *England*, ſince which all thoſe Plants formerly uſed for this Purpoſe have been neglected. This Plant is very unfit for this Uſe, becauſe its creeping Branches ſpread into the Walks where they put out Roots into the Gravel, ſo that unleſs frequently cut off, they cannot be kept within Compaſs.

This Sort ſends out many weak Stalks, which trail on the Ground, and put out Roots at their Joints, whereby it propagates faſt; the Leaves are placed by Pairs oppoſite, they are two Inches long, and Half an Inch broad, theſe are very hoary; thoſe next the Root are much ſmaller than the upper; Flowers come out from the Side of the Stalks on ſlender Foot Stalks, which branch out into ſeveral ſmaller, each ſupporting a white Flower, compoſed of five Petals, ſpilt at the Top. The whole Flower has the Appearance of Chickweed Flowers, but is larger; it flowers in *May*.

This Sort propagates too faſt when admitted into Gardens, ſo may be planted between Stones on the Side of Grottos, where it will thrive without Care.

The Seeds of the 2d Sort I received from *Iſtria*; this is by *Parkinſon* titled Hoary narrow-leaved Pink. The Leaves of this are narrower than thoſe of the former, and much whiter; the Stalks grow more erect, and the Seed Veſſels rounder, in which their chief Difference conſiſts. This is a trailing Plant, and propagates as the former, being equally hardy. It flowers in *May* and *June*, and the Seeds ripen in *Auguſt*.

The 3d Sort is annual; this grows naturally on arable Land in *Spain*, from whence the Seeds were ſent to *England*, where it is allowed a Place in Botanick Gardens for Variety, but hath not much Beauty; this hath branching Stalks, which grow about 6 Inches high, dividing by Pairs, the Flowers coming out in the Middle of the Diviſions, ſhaped like thoſe of Chickweed; the whole Plant has a clammy Moiſture, which ſticks to the Fingers. This flowers in *May*, and the Seeds ripen in *July*. If the Seeds are ſown in Autumn, they ſucceed better than in Spring, or if they are permitted to fall, the Plants will riſe without Care.

The 4th Sort is very like the 3d in its whole Appearance, and differs from it, in having but five Stamina in the Flower, whereas the other hath ten. This was diſcovered by Mr. *Lœfling*, a Pupil of Dr. *Linnæus*'s, in *Spain*, from whence he ſent the Seeds to *Upſal*, Part of which was ſent me by the Doctor.

The 5th Sort was diſcovered by Dr. *Tournefort*, in the *Levant*, from whence he ſent the Seeds to the Royal Garden at *Paris*, they have been ſince communicated to moſt of the curious Botanic Gardens in *Europe*. This is an annual Plant, which riſes with an upright Stalk a Foot high; the lower Leaves have much Reſemblance to thoſe of the *Lychnis*, which is called Lobels Catchfly,

to

ſo that when the Plants are young, it is not eaſy to diſtinguiſh them. The Stalks are garniſhed with Leaves of the ſame Shape, but ſmaller; theſe are placed by Pairs, and embrace the Stalks at their Baſe. The Flowers come out at the Top of the Stalks, and alſo from the Wings of the Leaves, on the upper Part of the Stalks, which are white, and ſhaped like thoſe of Chickweed. They appear in *May* and *June*, and are ſucceeded by beaked Capſules, containing many roundiſh Seeds.

If the Seeds of this Sort are ſown in Autumn, they will more certainly grow than thoſe which are ſown Spring, or if the Seeds are permitted to ſcatter, the Plants will come up and live through the Winter, and will require no other Care but to keep them clean from Weeds.

There are many other Species of this Genus than are here enumerated, which are Weeds in many Parts of *England*, therefore not worthy of Notice here.

CERASUS the Cherry Tree, in *French Ceriſier*.

I ſhall firſt enumerate the Sorts which are ſpecifically different from each other, and then mention the Varieties of theſe Fruits, which are cultivated in the *Engliſh* Gardens, many of which ſeem to differ ſo eſſentially from each other, that they may be allowed as ſpecifick Differences; but as I have not had an Opportunity of trying the various Sorts from Seeds, to ſee if they alter, ſo I choſe to inſert them only as Varieties, till further Obſervation may better ſettle their Boundaries.

The *Species* are,

1. CERASUS *foliis ovato-lanceolatis, ſerratis.* The common, or *Kentiſh* Cherry, with round, red, acid Fruit.

2. CERASUS *major ac ſylveſtris, fructu ſubdulci nigro colore inficiente. C. B. P.* 450. Greater wild Cherry Tree with a ſweetiſh Fruit, whoſe Juice affords a black Colour.

3. CERASUS *foliis ovato-lanceolatis, floribus confertis.* Cherry Tree with oval Spear-ſhaped Leaves, and Flowers growing in Cluſters. This is the *Ceraſus racemoſa hortenſis. C. B. P.* Commonly called the Cluſter Cherry.

4. CERASUS *floribus corymboſis, foliis ovatis. Lin. Sp. Plant.* Cherry Tree with Flowers growing in round Bunches, and oval Leaves. *Ceraſus ſylveſtris amara, mahaleb putata. I. B.* The *Mahaleb* or perfumed Cherry.

5. CERASUS *pumila Canadenſis, oblongo anguſto folio fructu parvo. Du Hamel.* Dwarf *Canada* Cherry, with oblong narrow Leaves, and a ſmall Fruit, called *Ragouminer, Nega,* or *Minel* in *Canada*.

The 1ſt Sort is the common *Kentiſh* Cherry, ſo well known, as to need no Deſcription. From this Sort, it hath been ſuppoſed, moſt of the Varieties which are cultivated in the *Engliſh* Gardens, have been raiſed; but as there are very great Differences in the Size and Shape of their Leaves, as alſo in the Shoots of the Trees, from thoſe of this Sort, I think it is very doubtful, where the Boundaries of their ſpecifick Differences terminate: However, I ſhall comply with the Generality of modern Botaniſts, in ſuppoſing the following Sorts to have been produced from the Seeds of this, as we have not ſufficient Experiments to determine otherwiſe.

The Early *May* Cherry.
The *May* Duke Cherry.
The Archduke Cherry.
The *Flemiſh* Cherry.
The Red Heart.
The White Heart.
The Morello
The Black Heart.
The Amber Heart.
The Ox Heart.
The Lukeward.
The Carnation.
The *Hertfordſhire* Heart.
Yellow *Spaniſh* Cherry
The Bleeding Heart,

Two Sorts with double Flowers, one larger and fuller than the other. Theſe are propagated for Ornament.

The 2d Sort is the Black Cherry, ſuppoſed to be a Native of *England*. This grows to a large Tree, fit for Timber, and is frequently found growing in the Woods. From this the only Varieties which I have ever known raiſed by Seeds, are the Black Coroun, and the ſmall Wild Cherry; of which there are two or three Varieties, which differ in the Size and Colour of their Fruit.

Theſe Wild Cherries are very proper to plant in Parks, becauſe they grow to a large Size, make beautiful Trees, and in Spring when they are in Flower, are very ornamental. The Fruit of them will be good Food for Birds; and when the Trees are cut down, the Wood is very uſeful for Turners. Theſe Trees will thrive in poor Land, better than moſt other Sorts; ſo there is an Advantage in propagating them in thoſe Places. The *French* often plant them for Avenues to their Houſes, on Land where they cannot get any other Trees to thrive; they alſo cultivate them in their Woods, to cut for Hoops, for which they are greatly eſteemed.

The Stones of this Sort are generally ſown for raiſing Stocks, to graft or bud the other Sorts of Cherries upon, being of quicker Growth, and longer Duration than either of the other; ſo are prefered to them.

The Wood of the 4th Sort, is by the *French* greatly eſteemed for making Cabinets, becauſe it hath an agreeable Odour. This, and the Wood of the Bird Cherry, paſs under the Appellation of *Bois de Sainte Lucie*; but the Bird Cherry is the true Sort.

The 5th Sort was brought from *Canada*, where it grows naturally, to the Gardens in *France*, where it is cultivated as a flowering Shrub for Ornament. The Stones of this were ſent me by Dr. *Bernard de Juſſieu*, Profeſſor of Botany at *Paris*, which ſucceeded very well in the *Chelſea* Garden; but by comparing this with a Specimen of the old *Chamæceraſus* or *Ceraſus humilis* of *Gerard*, and other old Writers, I find it to be the ſame Plant, for it agrees exactly with their Deſcriptions of it.

This is a low Shrub, which ſeldom grows more than 3 or 4 Feet high, ſending out many horizontal Branches, which ſpread on every Side, and are very ſubject to fall on the Ground, where they will put out Roots, and thereby multiply. The young Branches have a very ſmooth Bark, inclining toward red; the Leaves are long, narrow, very ſmooth, and entire, having the Appearance of ſome Sorts of Willow Leaves; of a light green on their upper Side, but of a bluiſh, or Sea-green, on their under: The Flowers come out from the Side of the Branches, 2 3 or 4 riſing at the ſame Joint, moſt Part of the Length of the young Shoots; theſe are ſhaped like thoſe of the common Cherry, but are ſmaller, ſtanding upon long ſlender Foot Stalks.. The Fruit is like thoſe of the ſmall wild Cherry, but hath a bitteriſh Flavour. It flowers about the ſame Time as the other Sorts of Cherries, and the Fruit ripens in *July*; theſe Fruit are good Food for Birds, ſo the *French* plant them among their other Shrubs, to entice the Birds to harbour there.

It is eaſily propagated by laying down the Branches early in Spring, which will take Root by the following Autumn, when they may be taken off, and either planted in a Nurſery, or to the Places where they are deſigned to remain. It may alſo be propagated by ſowing the Stones in the ſame Manner as other Cherries.

All the Sorts of Cherries which are uſually cultivated in Fruit Gardens, are propagated by budding or grafting the ſeveral Kinds into Stocks of the Black or wild Red Cherries, which are ſtrong Shooters, and of a longer Duration than any of the Garden Kinds. The Stones of theſe two Kinds are ſown in a Bed of light ſandy Earth in Autumn (or are preſerved in Sand till Spring, and then ſowed): When theſe Stocks ariſe, they muſt be carefully weeded; and if in dry Weather you refreſh them with Water, it will greatly promote their Growth. Theſe young Stocks ſhould remain in theſe Nurſery Beds till the ſecond Autumn after ſowing; at which Time you ſhould prepare an open Spot of good freſh Earth, which ſhould be well worked; but if the Soil is freſh, it will be the better. In this Ground, in *October*, you ſhould plant out the young Stocks at 3 Feet Diſtance Row from Row, and about a Foot aſunder in the Rows; being careful, in taking them from the Seed Beds, to looſen their Roots well with a Spade, to prevent their breaking; alſo to prune their Roots; and if they are inclinable to root downwards, ſhorten the Tap Root, to cauſe it to put out lateral Roots; but do not prune their Tops, for this they will not endure.

The ſecond Year after planting out, if they take well, they will be fit to bud, if they are intended for Dwarfs; but if for Standards, they will not be tall enough until the fourth Year; for they ſhould be budded or grafted near ſix Feet from the Ground, for otherwiſe the Graft will not advance much in Height; ſo that it will be impoſſible to make a good Tree from ſuch as are grafted low, unleſs the Graft is trained upward.

The uſual Way with the Nurſery Gardeners is, to bud their Stocks in Summer, and ſuch of them as miſcarry, they graft the ſucceeding Spring (the Manner of theſe Operations will be deſcribed under their proper Heads). Thoſe Trees where the Buds have taken, muſt be headed off in the Beginning of *March*, about ſix Inches above the Bud; and when the Bud hath ſhot in Summer, if you fear its being blown out by the Winds, you may faſten it up with ſome Baſs, or ſuch ſoft Tying, to that Part of the Stock which was left above the Bud. The Autumn following theſe Trees will be fit to remove. But if your Ground is not ready to receive them, they may remain two Years before they are tranſplanted; in doing which, you muſt obſerve not to head them, as is by many practiſed; for this, very often, is immediate Death to them; but if they ſurvive it, they ſeldom recover this Amputation in five or ſix Years.

If they are for a Wall, I would adviſe the planting Dwarfs between the Standards; ſo that while the Dwarfs are filling the Bottom of the Walls, the Standards will cover the Tops, and produce a great deal of Fruit: But theſe, as the Dwarfs riſe to fill the Walls, muſt be cut away, to make Room for them: And when the Dwarf Trees cover the Walls, the Standards ſhould be entirely taken away. But I would adviſe, never to plant Standard Cherries over other Fruits, for no other Sort of Fruit will proſper well under the Drip of Cherries.

When theſe Trees are taken up from the Nurſery, their Roots muſt be ſhortened, and all the bruiſed Parts cut off; as alſo the ſmall Fibres, which would dry, grow mouldy, and be a great Prejudice to the new Fibres; you muſt alſo cut off the dead Part of the Stock which was left above the Bud, cloſe down to the back Part of it, that the Stock may be covered by the Bud. If theſe Trees are deſigned for a Wall, obſerve to place the Bud directly from the Wall, that the back Part of the Stock that was cut, may be hid from Sight. The Soil that Cherries thrive beſt in, is a freſh Hazel Loam; but if the Soil is a dry Gravel, they will not live many Years, and will be perpetually blighted in the Spring.

The Sorts commonly planted againſt Walls are the Early *May*, and *May* Duke, which ſhould have a South aſpected Wall. The Hearts and common Duke will thrive on a Weſt Wall; and in order to continue this Sort later in the Seaſon, they are frequently planted againſt North and North Weſt aſpected Walls, where they ſucceed very well; and the Morello on a North Wall; which laſt is chiefly planted for preſerving. The Hearts are all of them ill Bearers; for which Reaſon they are ſeldom planted againſt Walls: But I am apt to believe, if they were grafted upon the Bird Cherry, and managed properly, that Defect might be remedied; for this Stock (as I am informed) will render Cherries very fruitful; and having the ſame Effect on Cherries, as the Paradiſe Stock hath on Apples, they may be kept in leſs Compaſs; which is an Experiment well worth the Trial.

Your Trees, if planted againſt a Wall, ſhould be placed at leaſt 20, or 24 Feet aſunder, with a Standard Tree between each Dwarf: This will be found a reaſonable Diſtance, when we conſider that Cherry Trees will extend as far as Apricocks, and many other Sorts of Fruit.

In pruning theſe Trees, you ſhould never ſhorten their Shoots; for the moſt Part of them produce their Fruit Buds at their extreme Part, which, when ſhortened, are cut off, and this often occaſions the Death of the Shoot: Their Branches ſhould be therefore trained in at full Length horizontally, obſerving in *May*, where there is a Vacancy in the Wall, to ſtop ſome ſtrong adjoining Branches, which will occaſion their putting out two or more Shoots; by which Means, at that Seaſon of the Year, you may always get a Supply of Wood for covering the Wall; at the ſame Time all foreright Shoots ſhould be diſplaced by the Hand; for if they are ſuffered to grow till Winter, they will not only deprive the bearing Branches of their proper Supply of Nouriſhment, but when they are cut out, it occaſions the Tree to gum in that Part (for Cherries bear the Knife the worſt of any Sort of Fruit Trees); but be careful not to rub off the Fides or Spurs, which are produced upon the two and three Years old Wood; for it is upon theſe that the greateſt Part of the Fruit are produced; which Fides will continue fruitful for ſeveral Years. It is for want of duly obſerving this Caution, that Cherry Trees are often ſeen ſo unfruitful, eſpecially the Morello, which the more it is cut, the weaker it ſhoots; and, at laſt, by frequent pruning, I have known a whole Wall of them deſtroyed; which, if they had been ſuffered to grow without pruning, might have lived many Years, and produced large Quantities of Fruit.

Cherry Trees are alſo planted for Orchards in many Parts of *England*, particularly in *Kent*, where there are large Plantations of theſe. The uſual Diſtance allowed for their ſtanding is 40 feet ſquare, at which Space they are leſs ſubject to Blight, than when they are cloſer planted; the Ground may be tilled between them almoſt as well as if it were entirely clear, eſpecially while the Trees are young; and the often ſtirring the Ground, provided you do not diſturb their Roots, will greatly help the Trees; but when they are grown ſo big as to ſhade the Ground, the Drip of their Leaves will ſuffer very few Things to thrive under them. Theſe Standard Trees ſhould be planted in a Situation defended as much as poſſible from ſtrong Weſterly Winds, which are very apt to break their tender Branches; this occaſions their guming, and is very prejudicial to them.

The Sorts beſt approved for Orchards are the common Red, or *Kentiſh* Cherry, the Duke, and Lukeward; which are plentiful Bearers. But Orchards of theſe are now ſcarcely worth planting, except where Land is very cheap; for the Uncertainty of their bearing with the Trouble in gathering the Fruit, and the ſmall Price it commonly yields, hath occaſioned the deſtroying many Orchards in *Kent*, within a few Years paſt.

This Fruit was brought out of *Pontus*, at the Time of the *Mithridatic* Victory by *Lucullus*, in the Year of the City 680, and were brought into *Britain* about *An. Dom.* 55. and were ſoon after ſpread through moſt Parts of *Europe*; it being generally eſteemed for its Earlineſs, being one of the firſt of the Tree Fruit that appears to welcome in the approaching Fruit Seaſon.

This Sort of Fruit hath been by many People grafted upon the Laurel, to which it is a Congener; but what Effect it hath either in the Growth of the Tree, or its Fruit, I have not been yet able to underſtand; though this Practice is as old as *Pliny*, who ſays it gives the Fruit a very pleaſant Bitterneſs: But there is little to be depended upon in the Writings of the Ancients, with reſpect to the ſeveral Sorts of Trees being grafted on each other; very few of thoſe we find mentioned by them to have been frequently practiſed, will ſucceed with us. Nor is it owing to the Difference of Climate, as ſome have ſuppoſed, who are inclinable to believe whatever they find related in thoſe Books, eſpecially in the Buſineſs of Huſbandry and Gardening, whereas many of their Rules for the practical Part of Huſbandry, are not founded on Experiments, but are mere Theory; for from many repeated Trials, made with the utmoſt Care, by Perſons of the beſt Skill, it appears that no two Sorts of Trees, of different Genuſes, will take upon each other. However, the Laurel and the Cherry being of the ſame Genus, or ſo near of Kin as to be ranked together by moſt Botaniſts, will take upon each other by grafting. But I have not yet ſeen any of the Trees ſo grafted, which have lived to be of any conſiderable Size; though I have ſeen many Trees ſo grafted, which have lived a few Years, but have made a very poor Progreſs; nor do I remember to have ſeen any Fruit upon the Cherry Trees which were grafted on the Laurels; therefore cannot determine what Effect this has on the Flavour of the Fruit.

There are ſome Perſons who graft the Duke, and other Sorts of Cherries upon the Morello Cherry, which is but a weak Shooter, in order to check the luxuriant Growth of their Trees; which will ſucceed for three or four Years; but they are not of long Duration, nor have I ever ſeen one Tree ſo grafted, which had made Shoots above 6 or 8 Inches long; but they were cloſely covered with Bloſſoms, ſo may produce ſome Fruit in a ſmall Compaſs; but theſe are Experiments unfit to be carried into general Uſe, and only proper to ſatisfy Curioſity, for is it not much better to allow the Trees a greater Share of Room againſt the Walls, when one Tree, ſo planted, and properly managed, will produce more Fruit than 20. of theſe Trees, or twice that Number when planted too cloſe, though they are grafted upon the Black Cherry, or any other free Stock.

The Early, or *May* Cherry, is firſt ripe; ſo one or two Trees of this Sort may be allowed a Place in a Garden, where there is Room for Variety. The next ripe is the *May* Duke, which is a larger Fruit and more valuable. After this comes the Archduke, which, if permited to hang upon the Tree till quite ripe, is an excellent Cherry; but few Perſons have Patience to let them hang their full Time, ſo rarely have them in Perfection, for theſe ſhould not be gathered before *Midſummer*, and if they hang a Fortnight longer they will be better. This is to be underſtood of the Situation near *London*, where they ripen a Fortnight earlier than in Places forty Miles diſtant, unleſs they have a very warm ſheltered Situation. When this Sort is planted againſt North Walls, the Fruit may be continued till *Auguſt*, but theſe muſt be protected from Birds, or they will deſtroy them.

The *Hertfordſhire* Cherry, is a Sort of Heart Cherry, but a firmer and better flavoured Fruit; it will not ripen earlier than the End of *July*, or Beginning of *Auguſt*, and is the more valuable, for its coming when the other Sorts of Cherries are gone. This is not very common in the Nurſeries as yet; but as it is one of the beſt Kinds of Cherries, it is not to be doubted but in a ſhort Time it will be as common as any of the other Sorts.

The Morello Cherry, is generally planted againſt Walls to a North Aſpect, and the Fruit commonly uſed for Preſerving, yet where planted to a better Aſpect, and ſuffered to hang upon the Trees until thoroughly ripe, is a very good Fruit for the Table; therefore two or three of the Trees of this Sort ſhould have Place where there is Plenty of Walling, upon a South-weſt Wall, where they will ripen perfectly by the Middle of *Auguſt*, at which Time they will be an acceptable Fruit.

The Carnation Cherry is alſo valuable for coming late in the Seaſon, this is a very firm fleſhy Fruit, but is not the beſt Bearer. This Sort will ripen very well on Eſpaliers; and by this Means, the Fruit may be continued longer in the Seaſon.

The large *Spaniſh* Cherry is nearly allied to the Duke Cherry, from which it ſeems to be only a Variety accidentally obtained; this ripens ſoon after the common Duke Cherry, and very often paſſes for it.

The yellow *Spaniſh* Cherry is of an oval Shape, and of an Amber Colour; this ripens late, and is a ſweet Cherry, but not of a rich Flavour, and being but a middling Bearer, is not often admitted into curious Gardens, unleſs where Variety is chiefly conſidered.

The Corone, or Coroun Cherry, is like the Black Heart; but a little rounder; this is a very good Bearer, and an excellent Fruit, ſo ſhould have a Place in every good Fruit Garden. This ripens the Middle of *July*.

The Lukeward ripens ſoon after the Corone Cherry; this is a good Bearer, and a very good Fruit; it is of a dark Colour, not ſo black as the Corone; this will do well in Standards.

The Black Cherry is ſeldom grafted or budded, but is generally ſown for Stocks to graft the other Kinds of Cherries upon; but where Perſons are curious to have the beſt flavoured of this Sort of Fruit, they ſhould be propagated by grafting from ſuch Trees as produce the beſt Fruit. This Sort of Cherry is frequently planted in Wilderneſſes, where it will grow to a large Size, and, at the Time of its flowering, will make a Variety, and the Fruit will be Food for the Birds.

The Double-flowering Cherry is alſo propagated for the Beauty of the Flowers, which are extremely fine, being as double and large as a Cinnamon Roſe; and theſe being produced in large Bunches on every Part of the Tree, render it one of the moſt beautiful Trees of the Spring. Some of the Flowers, which are leſs double, will often produce ſome Fruit, which the very double Flowers will not; but this Defect is ſufficiently recompenced in the Beauty of its Flowers. This is propagated by budding or grafting on the Black or Wild Cherry Stock, and the Trees are very proper to intermix with the ſecond Growth of flowering Trees.

CERASUS RACEMOSA. *See* Padus.

CERATONIA. *Lin. Gen. Plant.* 983. *Siliqua Tourn. Inſt.* The Carob, or St. *John*'s Bread, in *French Carouge.*

The *Characters* are,

It is male and female in diſtinct Trees. The male Flowers have large Empalements, divided into 5 *Parts; they have no Petals, but have* 5 *long Stamina, terminated by large Summits. The female Flowers have Empalements of one Leaf, divided by* 5 *Tubercles; they have no Petals, but a fleſhy Germen ſituated within the Receptacle, ſupporting a ſlender Style, crowned by a Stigma in form of a Head. The Germen becomes a long fleſhy compreſſed Pod, divided by tranſverſe Partitions, each having* 1 *large roundiſh compreſſed Seed.*

We have but one *Specie* of this Plant, *viz.*

1. Ceratonia. *H. L.* The Carob Tree, or St. *John*'s Bread. This is the *Siliqua edulis* of *Caſpar Baubin*, and the *Caroba* of *Dale.*

This Tree is very common in *Spain*, *Italy*, and the *Levant*, where it grows in the Hedges, and produces a great Quantity of long, flat, brown coloured Pods, which are thick, meally, and of a ſweetiſh Taſte. Theſe Pods are many Times eaten by the Poorer Sort of Inhabitants, when they have a Scarcity of other Food, but they are apt to looſen the Belly, and cauſe Gripings of the Bowels. Theſe Pods are directed by the College of Phyſicians to enter ſome medicinal Preparations, for which Purpoſe they are often brought from Abroad.

In *England* the Tree is preſerved by ſuch as delight in exotick Plants, as a Curioſity; the Leaves always continue green; and being different in Shape from moſt other Plants, afford an agreeable Variety, when intermixed with Oranges, Myrtles, &c. in the Green-houſe.

Theſe Plants are propagated from Seeds, which, when brought over freſh in the Pods, will grow very well, if ſown in Spring upon a moderate hot Bed; when the Plants come up, they ſhould be carefully tranſplanted, each into a ſmall Pot filled with light rich Earth, and plunged into another moderate hot Bed; obſerving to water and ſhade them until they have taken Root; after which let them have Air in Proportion to the Heat of the Weather. In *June* inure them to the open Air by Degrees, and in *July* they ſhould be removed out of the hot Bed, and placed in a warm Situation, where they may remain until the Beginning of *October*, when they ſhould be removed into the Green-houſe, placing them where they may have free Air in mild Weather; for they are pretty hardy, and require only to be ſheltered in hard Froſts. When the Plants have remained in the Pots three or four Years, and have gotten Strength, ſome of them may be turned out of the Pots in Spring, and planted in the full Ground, in a warm Situation, where they will endure the Cold of our ordinary Winters very well, but muſt have ſome Shelter in very hard Weather.

I have not yet ſeen any of theſe Trees produce Flowers, though from ſome which have been planted ſome Time againſt Walls, it is probable there may be Flowers and Fruit in a few Years; though it cannot be expected that the Fruit will ever ripen in this Country.

CERBERA. *Lin. Gen. Plant.* 260. *Thevetia. Lin. Hort. Cliff.* 76. *Prod. Leyd.* 413. *Abouai. Tourn. Inſt.*

The *Characters* are,

The Empalement is compoſed of five ſharp-pointed Leaves, which ſpread open, and fall away. The Flower is of one Leaf, Funnel-ſhaped, having a long Tube, and is ſpread open at the Top, where it is divided into five large Segments, which are obtuſe, and ſtand oblique to the Mouth of the Tube; it hath five Stamina ſituated in the Middle of the Tube, which are terminated by erect Summits, which ſtand cloſe together; in the Center is ſituated a roundiſh Germen, ſupporting a ſhort Style, crowned by a Stigma in form of a Head; the Germen becomes a large, fleſhy, roundiſh Berry, with a longitudinal Furrow on the Side, dividing it into two Cells, each, containing a ſingle large compreſſed Nut.

The *Species are,*

1. Cerbera *foliis ovatis. Lin. Sp. Plant.* 208. *Cerbera* with oval Leaves. The *Abouai.*

2. Cerbera *foliis linearibus, longiſſimis, confertis. Lin. Sp. Plant.* 209. *Cerbera* with very long narrow Leaves, growing in Cluſters. This is the *Abouai Nerii folio, flore luteo. Plum. Cat.* 20. *Abouai* with a Roſe-bay Leaf, and a yellow Flower.

3. Cerbera *foliis lanceolatis, nervis tranſverſalibus. Flor. Zeyl.* 106. *Cerbera* with Spear-ſhaped Leaves, and tranſverſe Nerves. This is the *Manghas lacteſcens, foliis Nerii craſſis venoſis, Jaſmini flore, fructu Perſici ſimili venenato. Burm. Zey.* 150. *Tab.* 70. Milky *Manghas* with a thick veined Oleander Leaf, a Jaſmine Flower, and a poiſonous Fruit reſembling a Peach.

The 1ſt Sort grows naturally in the *Brazils*, alſo in the *Spaniſh Weſt-Indies* in Plenty: and there are ſome of the Trees growing in the *Britiſh* Iſlands of *America*; this riſes 8 or 10 Feet with an irregular Stem, ſending out many crooked diffuſed Branches, which toward their Tops are garniſhed with thick ſucculent Leaves, about three Inches long, and near two broad, of a lucid green, ſmooth, and very full of milky Juice, as is every Part of the Trees. The Flowers come out in looſe Bunches, at the End of the Branches, which are of a Cream Colour, having long narrow Tubes, and at the Top cut into five obtuſe Segments, which ſeem twiſted, ſo as to ſtand oblique to the Tube; theſe ſpread open, and have the Appearance of the Flowers of *Oleander.* It flowers in *July* and *Auguſt*, but never produces Fruit in *England.* The Wood of this Tree ſtinks moſt abominably, and the Kernels of the Nuts are a moſt deadly Poiſon, ſo that the *Indians* always caution their Children againſt eating them, for they know of no Antidote to expel this Poiſon; nor will any of them uſe the Wood for Fuel; they take the Kernels out of the Shells, into which they put ſmall Stones, then bore a Hole through each Shell, and ſtring them; theſe they tie about their Legs to dance with, as the Morris Dancers uſe Bells.

The 2d Sort grows naturally in the *Spaniſh Weſt-Indies*; in ſome of the *French* Iſlands in *America*, and hath lately been introduced into the *Britiſh* Iſlands, from whence I received the Seeds by the Title of *French* Phyſick Nut, but how it came by that Appellation, I cannot imagine, becauſe there is another Plant which grows common there, and has paſſed under that Title many Years.

This riſes with a round Stalk about the ſame Height as the former, dividing upward into many Branches. Theſe, when young, are covered with a green ſmooth Bark, but as they grow older, the Bark becomes rough, and changes to a Grey or Aſh Colour. The Leaves are four or five Inches long, and Half an Inch broad in the Middle, ending in ſharp Points; theſe are of a lucid green, and come out in Cluſters without Order, and are full of a milky Juice, which flows out when they are broken. The Flowers come out from the Side of the Branches on long Foot Stalks, each ſupporting two or three yellow Flowers with long Tubes, ſpreading open in the ſame Manner as the former. It flowers about the ſame Time, but never produces Fruit in *England*.

The 3d Sort grows naturally in *India*, alſo in ſome Parts of the *Spaniſh Weſt-Indies*, from whence I received the Seeds; this riſes with a woody Stem to the Height of twenty Feet, ſending many Branches toward the Top, which are garniſhed with long Spear-ſhaped Leaves, rounded at their Ends; they are thick, ſucculent, and, on their upper Side, of a lucid green, having ſeveral tranſverſe Nerves from the Mid-rib to the Side; on their under Side they are of a paler green. The Flowers are produced at the End of the Branches, ſtanding on long Foot Stalks, each ſuſtaining two or three Flowers ſhaped like thoſe of the other Species.

Theſe Plants may be propagated from their Nuts, which muſt be procured from the Countries where they grow naturally; theſe ſhould be put into ſmall Pots filled with light Earth, and plunged into a hot Bed of Tanners Bark in Spring, and treated in the ſame Manner as other tender exotick Seeds, giving them now and then a little Water to promote their Vegetation. When the Plants are come up about two Inches high, they ſhould be tranſplanted each into a ſmall Pot, filled with light ſandy Earth, and plunged again into a hot Bed of Tanners Bark, obſerving to ſhade the Glaſſes in the Heat of the Day, until the Plants have taken new Root; they muſt alſo be frequently refreſhed with Water, but it muſt not be given in too large Quantities. As the Summer advances, theſe Plants ſhould have Air admitted to them, in Proportion to the Warmth of the Seaſon; and when they have filled theſe Pots with their Roots, they ſhould be turned out, and tranſplanted into other Pots of a larger Size, but they muſt not be too large, for the Roots of theſe Plants ſhould be confined, nor ſhould the Earth in which they are planted be rich, but a light ſandy Soil is beſt for them; after they are new poted, they ſhould be plunged into the hot Bed again, obſerving to water them now and then, and alſo to admit Air under the Glaſſes every Day, in Proportion to the Warmth of the Seaſon. When the Plants are grown about a Foot high, they ſhould have a larger Share of Air, in order to harden them before the Winter, but they ſhould not be wholly expoſed to the open Air. In the Winter theſe Plants ſhould be placed in a warm Stove, and during that Seaſon they ſhould have very little Water, eſpecially in cold Weather, leſt it ſhould rot their Roots. The following Spring theſe Plants ſhould be ſhifted again, at which Time you ſhould take away as much as you conveniently can of the old Earth from their Roots, and cut off the decayed Fibres; then put them into Pots filled with the ſame light ſandy Earth, and plunge them into the Bark Bed again, for theſe Plants will not thrive well unleſs they are conſtantly kept in Tan; and as they abound with milky Juice, ſo they ſhould be ſparingly watered, for they are impatient of Moiſture, eſpecially during the Winter Seaſon.

When by any Accident the Tops of theſe Plants are injured, they frequently put out Shoots from their Roots, which if carefully taken up and poted, will make good Plants, ſo that they may be this Way propagated.

CERCIS. *Lin. Gen. Plant.* 458. *Siliquaſtrum. Tourn. Inſt. R. H.* 646. The *Judas* Tree, in *French*, *Guainier*.

The *Characters* are,

It hath a ſhort Bell-ſhaped Empalement of one Leaf, convex at the Bottom, and full of a Honey Liquor, at the Top it is indented in five Parts. The Flower hath five Petals, inſerted in the Empalement, and greatly reſembles a papilionaceous Flower. The two Wings riſe above the Standard, and are reflexed; the Standard is of one roundiſh Petal, and the Keel is compoſed of two Petals, in form of a Heart, which incloſe the Parts of Generation. It hath ten diſtinct Stamina, which decline, four of which are longer than the reſt, and are terminated by oblong incumbent Summits. It hath a long ſlender Germen, ſitting upon a ſlender Style, crowned by an obtuſe Stigma; the Germen becomes an oblong Pod with an oblique Point, having one Cell, incloſing ſeveral roundiſh compreſſed Seeds.

The *Species* are,

1. CERCIS *foliis cordato-orbiculatis glabris. Hort. Cliff.* 156. *Cercis* with round, Heart-ſhaped, ſmooth Leaves. This is the *Siliquaſtrum. Caſt. Duran.* 415, and the *Arbor Judæ. Dod. Pempt.* 786. The common *Judas* Tree.

2. CERCIS *foliis cordatis pubeſcentibus. Hort. Cliff.* 156. *Cercis* with downy Heart-ſhaped Leaves. This is the *Siliquaſtrum Canadenſe. Tourn. Inſt. R. H.* 647. *Canada Arbor Judæ*, or Red Bud Tree.

The 1ſt Sort grows naturally in the South of *France*, in *Spain*, and *Italy*, and is by the *Spaniards* and *Portugueſe*, titled the Tree of Love; this riſes with an upright Trunk to the Height of 12 or 14 Feet, covered with a dark reddiſh Bark, and divides upward into many irregular Branches, garniſhed with round, Heart-ſhaped, ſmooth Leaves, placed irregularly on the Branches, having long Foot Stalks; they are of a pale green on their upper, and of a grayiſh Colour on their under Side, and fall off in Autumn. The Flowers come out on every Side the Branches, and many Times from the Stem of the Tree in Cluſters, ariſing many from the ſame Point, having ſhort Foot Stalks; they are of a very bright purple Colour, ſo make a fine Appearance, eſpecially when the

Branches are covered pretty thick with them, for they come out in the Spring with the Leaves, ſo are in full Beauty before the Leaves have obtained to half their Size. The Shape of the Flower is the ſame of the other papilionaceous (or Butterfly) Flowers; they have an agreeable Poignancy, ſo are frequently eaten in Sallads. When the Flowers fall off, the Germen becomes a long flat Pod, with one Cell, containing one Row of roundiſh Seeds, which are a little compreſſed; but theſe do not often ſucceed the Flowers in this Country upon Standard Trees, but where they have been planted againſt good aſpected Walls, I have ſeen great Plenty of Pods, which, in warm Seaſons have ripened very well.

Theſe Trees are uſually planted with other flowering Trees and Shrubs, as ornamental to Pleaſure Gardens, and for their ſingular Beauty well deſerve a Place, for when arrived to a good Size, they are very productive of Flowers, ſo that the Branches are often cloſely covered with them, and the ſingular Shape of their Leaves makes a very pretty Variety in Summer, after the Flowers are paſt, and are never damaged by Inſects, but are often entire when many other Trees have their Leaves almoſt eaten up. This Tree flowers in *May*, when planted in the full Air, but againſt warm Walls it is a Fortnight or three Weeks earlier.

The Wood of this Tree is very beautifully veined with black and green, and takes a fine Poliſh.

There are two other Varieties of this Tree, one with a white, and the other a Fleſh-coloured Flower, but theſe have not half the Beauty of the firſt.

The 2d Sort grows naturally in *North America*, where it is called Red Bud, from the red Flower Buds appearing in the Spring, before the Leaves come out; this grows to a middling Stature in the Places where it is a Native; but in *England* rarely riſes with a Stem to any Height, but branches out near the Root. The Branches of this are weaker than the 1ſt Sort; the Leaves are downy, and terminate in Points, whereas thoſe of the 1ſt are ſmooth, and round at the End where they are indented. The Flowers of this are alſo ſmaller, ſo do not make ſo fine Appearance, but the Trees are equally hardy, ſo will thrive in the open Air very well.

The Flowers of this Sort are put into Sallads by the Inhabitants of *America*, and the *French* in *Canada* pickle them, but they have little Flavour. The Wood is of the ſame Colour and Texture as that of the firſt.

Theſe Plants may be propagated by ſowing their Seed upon a Bed of light Earth, towards the latter End of *March*, or the Beginning of *April* (and if you put a little hot Dung under the Bed, it will greatly facilitate the Growth of the Seeds); when your Seeds are ſown, you ſhould ſift the Earth over them about Half an Inch thick; and, if the Seaſon proves wet, it will be proper to cover the Bed with Mats, to preſerve it from great Rains, which will rot the Seeds; theſe Seeds will often remain till the Spring following before they come up, ſo the Ground muſt not be diſturbed till you are convinced the Plants are all come up, for ſome few may riſe the firſt Year, and a greater Number the ſecond.

When the Plants are come up, they ſhould be carefully cleared from Weeds, and in very dry Weather now and then refreſhed with Water, which will greatly promote their Growth. The Winter following, if the Weather is very cold, it will be proper to ſhelter the Plants, by covering them with Mats or dry Straw in hard Froſts, but they ſhould conſtantly be opened in mild Weather, otherwiſe they will grow mouldy, and decay.

About the Beginning of *April*, prepare a Spot of good freſh Ground, to tranſplant theſe out (for the beſt time to remove them is juſt before they begin to ſhoot); then you ſhould carefully take up the Plants, being careful not to break their Roots, and plant them in the freſh Ground as ſoon as poſſible, becauſe if their Roots are dried by the Air, it will greatly prejudice them.

The Diſtance theſe ſhould be planted, muſt be proportionable to the Time they are to remain before they are again tranſplanted, but commonly they are planted two Feet Row from Row, and a Foot aſunder in the Rows, which is full Room enough for them to grow two or three Years, by which Time they ſhould be tranſplanted where they are deſigned to remain, for if they are too old when removed, they ſeldom ſucceed ſo well.

The Ground between the Plants ſhould be carefully kept clean from Weeds in Summer, and in Spring ſhould be well dug, to looſen the Earth, that their Roots may better extend themſelves every Way; you ſhould alſo at that Seaſon prune off all ſtrong Side Branches (eſpecially if you intend to train them up for Standard Trees), that their Top Branches may not be checked by their Side Shoots, which often attract the greateſt Part of the Nouriſhment from the Roots; and if their Stems are crooked, you muſt place a ſtrong Stake down by the Side of each Plant, and faſten the Stem to it in ſeveral Places, ſo as to render it ſtrait, which Direction it will ſoon take as it grows larger, and thereby the Plants will be rendered beautiful.

When they have been in this Nurſery 3 or 4 Years, they ſhould be tranſplanted in Spring where they are to remain, which may be in Wilderneſs Quarters, among other flowering Trees, obſerving to place them with Trees of the ſame Growth, ſo as they may not be overhung, which is a great Prejudice to moſt Plants.

CEREFOLIUM. *See* Chærefolium.

CEREUS. *Par. Bat.* 122. *Boerh. Ind. Juſſ. Act. R. Par. Cactus. Lin. Gen. Plant.* 539. The Torch Thiſtle.

The *Characters* are,

It hath an oblong ſcaly Empalement, which is covered with Spines, and ſits upon the Germen. The Flower is compoſed of a great Number of narrow pointed Petals, ſpread open like the Sun's Rays. It hath a great Number of declining Stamina, inſerted to the Baſe of the Petals, and terminated by oblong Summits. The Germen, which is ſituated under the Empalement, ſupports a long cylindrical Style, crowned with a multifid Stigma, in form of a Head. The Germen becomes an oblong ſucculent Fruit, with a prickly Skin, full of ſmall Seeds incloſed in the Pulp.

The *Species* are,

1. Cereus *erectus, ſexangularis, longus, angulis diſtantibus.* Upright long *Cereus* with 6 Angles, far diſtant. *Cereus erectus altiſſimus Syrinamenſis. Par. Bat.* 116. Talleſt upright Torch Thiſtle of *Surinam.*

2. Cereus *erectus quandrangularis, angulis compreſſis.* Upright *Cereus* with 4 compreſſed Angles. *Cereus erectus quadrangularis, Coſtis alarum inſtar aſſurgentibus. Boerh. Ind. alt.* Four cornered upright Torch Thiſtle.

3. Cereus *erectus octangularis, angulis obtuſis, ſu-*

pernè inermibus. Upright *Cereus* with 8 obtuſe Angles, having no Spines on the upper Part. *Cereus erectus, fructu rubro non ſpinoſo. Par. Bat.* 114. Upright Torch Thiſtle with a red Fruit, having no Spines.

4. Cereus *erectus octangularis, angulis obtuſis, ſpinis robuſtioribus patulis.* Upright *Cereus* with 8 Angles which are obtuſe, and ſtrong ſpreading Spines. This is the *Cereus erectus maximus fructu ſpinoſo rubro.* Greateſt upright Torch Thiſtle with a red prickly Fruit.

5. Cereus *erectus novemangularis, obſoletis angulis, ſpinis lanâ brevioribus.* Upright *Cereus* with nine Angles, and Spines ſhorter than the Down. This is the *Cereus Curoſſavicus, erectus, maximus, fructu rubro non ſpinoſo, lanugine flaveſcente. Par. Bat.* 115. Greateſt upright Torch Thiſtle with a red Fruit, having no Spines, and a yellowiſh Down.

6. Cereus *erectus octangularis, ſpinis lanâ longioribus.* Upright *Cereus* with 8 Angles, and Spines longer than the Down. *Cereus erectus craſſiſſimus maximè anguloſus, ſpinis albis pluribus longiſſimis, lanugine flavâ. Boerh. Ind.* Upright thickeſt Torch Thiſtle, having many Angles, ſeveral very long white Spines, and a yellow Down.

7. Cereus *erectus novemangularis, ſpinis lanâ æqualibus.* Upright Torch Thiſtle with 9 Angles, and Spines of equal Length with the Down. This is the *Cereus erectus, gracilis, ſpinoſiſſimus, ſpinis flavis, polygonus, lanugine albâ palleſcente. Boerh. Ind. alt.* 293. Upright, ſlender, Torch Thiſtle, very full of yellowiſh Spines, many Angles, and a pale white Down.

8. Cereus *altiſſimus, gracilior, fructu extus luteo intus niveo, ſeminibus nigris pleno.* Talleſt ſlender Torch Thiſtle with a Fruit yellow without, white within, and full of Black Seeds.

9. Cereus *repens triangularis, fructu maximo rotundo, rubro, eſculento.* Creeping triangular Torch Thiſtle, with a very large, round, red, eatable Fruit. This is the *Cereus ſcandens minor trigonus articulatus fructu ſuaviſſimo. Par. Bat. prod.* 118. Leſſer, creeping, three cornered, jointed Torch Thiſtle, with a very ſweet Fruit, commonly called in the *Weſt Indies*, the true prickly Pear, and by the *Spaniards*, *Pithatiaya.*

10. Cereus *repens triangularis, angulis compreſſis.* Creeping, triangular Torch Thiſtle, with compreſſed Angles. This is the *Ficoides Americanum ſ. Cereus erectus, criſtatus, foliis triangularibus profundè canaliculatis. Pluk. Phyt. Tab.* 29. *f.* 3. Creſted *American* Torch Thiſtle, with three Angles deeply channeled.

11. Cereus *repens ſubquinquangularis.* Creeping Torch Thiſtle with 5 Angles. This is the *Cereus ſcandens minor polygonus articulatus. Par. Bat.* 120. Leſſer jointed climbing Torch Thiſtle with many Angles.

12. Cereus *repens decemangularis.* Creeping *Cereus* with 10 Angles. This is the *Cereus minor ſcandens, polygonus, ſpinoſiſſimus, flore purpureo.* Leſſer climbing Torch Thiſtle, with many ſpinous Angles and a purple Flower.

The 1ſt Sort is the moſt common in the *Engliſh* Gardens. This grows naturally in *Surinam*, from whence it was brought to *Holland*, where it produced Flowers in the Year 1681, and from the *Dutch* Gardens, moſt Parts of *Europe* have been ſupplied with this Plant.

This riſes with an upright Stalk, having 6 large Angles, which are far aſunder, and are armed with ſharp Spines, which come out in Cluſters at certain Diſtances, ariſing from a Point, but ſpread open every way like a Star; the outer Subſtance of the Stem is ſoft, herbaceous, and full of Juice, but in the Center there is a ſtrong fibrous Circle running the whole Length, which ſecures the Stem from being broke by Winds. Theſe will riſe to the Height of 30 or 40 Feet, provided their Tops are not injured, if they have Room to grow; but ſome of them have grown too tall to be kept in the Stoves, ſo have either been cut off, or the Plants laid down at Length in Winter; but whenever the Stems are cut, or otherwiſe injured, they put out one, two, or ſometimes three Shoots, from the Angles immediately under the wounded Part, and frequently one or two lower down. Theſe Shoots, if they are not cut off, form ſo many diſtinct Stems, and grow upright; but theſe ſeldom are ſo large as the principal Stem, eſpecially if more than one is left at the ſame Place. The Flowers come out from the Angles, on the Side of the Stem; theſe have a thick fleſhy Foot Stalk, which is ſcaly, round, channelled, and hairy, ſupporting a ſwelling Germen, upon the Top of which ſits the ſcaly prickly Empalement, cloſely ſurrounding the Petals of the Flowers, till a little Time before they expand, which in moſt of the Sorts, is in the Evening, and their Duration is very ſhort; for before the next Morning they wither and decay. The Flower of this Sort is compoſed of many concave Petals, which, when fully expanded, are as large as thoſe of the Hollyhock; the inner Petals are white, and are crenated at their Extremity. The Empalement is green, with ſome purple Stripes; the Middle of the Flower is occupied by a great Number of Stamina, which decline in the Middle, and riſe at their Extremities, having roundiſh Summits. The Flowers of this Kind are never ſucceeded by Fruit in this Country; nor do the Plants often produce their Flowers here, but when they do, there are generally ſeveral on the ſame Plant. I have ſome Years had more than a dozen upon a ſingle Plant, which have all flowered within a few Days of each other. The uſual Time of its flowering is in *July.*

This Sort is not ſo tender as the others, ſo may be preſerved in a warm Green-houſe, without any artificial Heat; but the Plants ſhould have no Water given them in Winter, when they are thus ſituated; for unleſs they are placed in a Stove, where the Moiſture is ſoon evaporated, the Wet will occaſion them to rot.

Theſe Plants grow naturally upon very dry rocky Places, where their Roots are confined, ſo they muſt not be planted in large Pots, nor ſhould they be planted in rich Soil; the beſt Compoſt for them is one third light Earth from a Common, a third of Sea Sand, and the other Part ſifted Lime Rubiſh; if theſe are well mixed together, and often turned over before the Plants are put into it, they will thrive the better. The farther Directions will be hereafter exhibited.

The 2d Sort riſes with an upright Stem, like the firſt, but it hath only 4 Angles, which are compreſſed, and ſtand far aſunder. This is very ſubject to put out many Shoots from the Sides, which ſtops its upright Growth, ſo that the Plants rarely riſe more than 4 or 5 Feet high. This hath not flowered in *England*, ſo far as I have been able to learn.

The 3d, 4th, 5th, 6th, 7th, and 8th Sorts grow naturally in the *Britiſh* Iſlands of *America*, from whence I received them in 1728. Theſe have the ſame Form as the 1ſt, but differ in the Size of their Stems, the Number of Angles, and the Length of their Spines, as is before expreſſed in their Titles; but, except the 8th Sort, not any of them have flowered in *England* as yet, though there are many of the Plants which are more than 12 Feet high; the 8th Sort hath the ſmalleſt Stem of any of the upright Sorts which I have yet ſeen: This hath 9 obtuſe Angles, which are armed with ſhort Spines, placed at farther Diſtances than thoſe of the other Sorts, nor are the Channels between the Angles near ſo deep. The Flowers are produced from the Angles, in the ſame Manner as the firſt, but they are ſmaller, and the Empalement is of a light green, without any Mixture of Colour. The Fruit is about the Size and Shape of a middling Bergamot Pear, having many ſoft Spines on the Skin; the Outſide is a pale yellow, the Inſide very white, full of Pulp, having a great Number of ſmall black Seeds lodged in it. This Sort frequently flowers in *July*, and in warm Seaſons will perfect its Fruit, which hath very little Flavour in this Country.

Theſe Sorts are more impatient of Cold than the firſt, ſo require a Stove to preſerve them in Winter; nor ſhould they be expoſed abroad in Summer, but kept conſtantly in the Houſe, giving them a large Share of Air in warm Weather.

The 12th Sort grows naturally in *Peru*, from whence it was ſent to the Royal Garden at *Paris*; in 1734, I was favoured with ſome Cuttings of it, by Dr. *Bernard de Juſſieu*, Demonſtrator of the Plants in that Garden. Theſe ſucceeded in the *Chelſea* Garden, and have ſince been communicated to moſt of the curious Gardens in *England*. This is not ſo tender as the other Sorts, ſo may be preſerved in a good Green-houſe in Winter, and in Summer ſhould be expoſed to the open Air, which will prevent the Shoots from drawing weak, and thereby a greater Number of Flowers will be produced; but during the Time they remain in the open Air, they ſhould have very little Water; and if the Seaſon ſhould prove wet, the Plants ſhould be ſcreened from it, otherwiſe it will cauſe them to rot the following Winter. This Sort produces its Flowers in *May*, and ſometimes earlier, when the Seaſon is warm.

The 9th Sort is, by the Inhabitants of *Barbadoes*, trained up againſt their Houſes, for the Sake of its Fruit, which is about the Bigneſs of a Bergamot Pear, and of a moſt delicious Flavour. This, and alſo the 10th, 11th, and 12th Sorts, are very tender, ſo require a very warm Stove to preſerve them. Theſe ſhould be placed againſt the Walls of the Stove, into which they will inſinuate their Roots, and extend themſelves to a great Length; and with a little Help, in faſtening them to the Wall here and there, may be led up about the Cieling of the Houſe, where they will appear very handſome. The 11th Sort, when arrived to a ſufficient Strength, will produce many exceeding large, beautiful, ſweet-ſcented Flowers; but they are (like all the Flowers of theſe Kinds) of very ſhort Duration, ſcarcely continuing full blown 6 Hours; nor do the ſame Flowers ever open again, when once cloſed: They begin to open in the Evening between 7 and 8 of the Clock, are fully blown by 11, and by 3 or 4 the next Morning fade, and hang down quite decayed; but, during there Continuance, this is ſcarce any Flower of greater Beauty, or that makes a more magnificent Appearance; for the Calyx of the Flower, when open, is near a Foot Diameter, the Inſide of which, being of a ſplendid yellow Colour, appears like the Rays of a bright Star, the Outſide of a dark brown, and the Petals of the Flowers being of a pure white, adds to the Luſtre, and the vaſt Number of recurved Stamina, ſurrounding the Style in the Center of the Flower, make a fine Appearance; add to this the fine Scent of the Flower, which perfumes the Air to a conſiderable Diſtance; there is ſcarce any Plant which deſerves a Place in the hot Houſe ſo much as this, eſpecially as it is to be trained againſt the Wall, where it will not take up Room. The uſual Seaſon of its flowering is in *July*, and, when the Plants are large, they will produce a great Number of Flowers, ſo that there will be a Succeſſion of them for ſeveral Nights, and many of them will open the ſame Night. I have frequently had 6 or 8 Flowers open at the ſame Time upon one Plant, which have made a moſt magnificent Appearance by Candle-light, but none of them have been ſucceeded by any Appearance of Fruit.

The 10th Sort produces a Flower little inferior to the former, as I have been informed by Perſons who have ſeen them, but I never had the good Fortune to have any of theſe Plants flower, which have been under my Care; nor have I heard of more than two Gardens where they have as yet flowered in *England*; the firſt of them was many Years ſince in the Royal Gardens at *Hampton-Court*, when there was a curious Collection of exotick Plants kept in good Order, but which have ſince been greatly neglected; the other was produced in the Gardens of the Right Hon. the Marquis of *Rockingham*, at *Wentworth-Hall*, in *Yorkſhire*. Theſe are the only Gardens in this Country where I have heard of this Sort having produced Flowers; although there are many of theſe Plants in ſeveral Gardens, which are of a conſiderable Age, and extend their Branches to a very great Diſtance.

The 9th Sort has never produced Flowers in *England*, nor have we any good Figure of the Flower in any of the Botanick Books; but I have been informed by curious Perſons who have reſided in *America*, that the Flowers are not near ſo beautiful as thoſe of the 10th and 11th, but the Fruit is greatly eſteemed by the Inhabitants.

The 12th Sort produces a greater Number of Flowers than either of the other; they are of a fine Pink Colour both within and without; the Petals are not ſo numerous, and the Tube of the Flower is longer than thoſe of the other Species; and, contrary to all the other Sorts, keep open 3 or 4 Days, if the Weather is not too hot, or the Stove kept too warm. During their Continuance they make a fine Appearance in the Houſe. This Sort has very ſlender trailing Branches, which require to be ſupported; but theſe do not extend ſo far as thoſe of the other Sort, nor are their Branches jointed as thoſe are, ſo cannot be trained ſo far againſt the Walls of the Houſe; but as it produces ſuch beautiful Flowers, and in ſo great Plenty, it may be placed among the firſt Claſs of exotick Plants. This has produced Fruit in the Garden at *Chelſea*, but it has not ripened.

Theſe are all propagated and increaſed by Cuttings, which you may take off their Stems at what Length you pleaſe; theſe ſhould be laid in a dry Place to heal, at leaſt ten Days, or a Fortnight, before they are planted; but if they lie 3 Weeks it is much better, and they will be in leſs Danger of Roting, eſpecially the moſt ſucculent Sorts.

Theſe Cuttings ſhould be planted in Pots filled with the Mixture of Earth before directed, laying ſome Stones in the Pots to drain off the Moiſture; then place the Pots in a gentle hot Bed of Tanners Bark, to facilitate their rooting, giving them once a Week a gentle Watering. The beſt Seaſon for this Work is in *June*, or the Beginning of *July*, that they may have Time to root before Winter; towards the Middle of *Auguſt* begin to give them Air by Degrees to harden them, but they ſhould not be wholly expoſed to the open Air or Sun; at the End of *September* they muſt be removed into the Stove, or Greenhouſe, where they are to abide in Winter, during which Seaſon you muſt be very careful not to let them have much Water; and always obſerve to place the young Plants, for the firſt Winter, in a little warmer Situation than the older, being ſomewhat tenderer.

Theſe Plants ſhould always have a dry Situation in Winter, for as they imbibe the greateſt Part of their Nouriſhment from the circumambient Air, ſo if this be too replete with moiſt Particles, it will occaſion their roting, therefore they ſhould not be expoſed abroad, not even in the Midſt of Summer, unleſs they are under Shelter; for great Rains, which often happen at that Seaſon, are very injurious to them; the firſt 8 Sorts ſhould be therefore placed ſo as to enjoy a free Air in the Summer, but ſcreened from Rains, and great Dews; it will therefore be much the better Method to ſet them in an open Glaſs Stove, where the Windows may be ſet open in good Weather, and ſhut in cold or wet. The other 4 Sorts muſt not be expoſed too much to the open Air, even in the hotteſt Seaſon, eſpecially if you deſign to have them flower; and in Winter they ſhould be kept very warm, and have no Water.

When you have once cut off the Tops of any of theſe Plants, in order to increaſe them, the lower Parts will put forth freſh Shoots from their Angles, which, when grown to be 8 or 9 Inches long, may alſo be taken off to make freſh Plants; and, by this Means, the old Plants will continually afford a Supply, ſo that one Plant of a Sort, will be ſufficient to preſerve for a Breeder.

Theſe Plants being ſucculent, will keep a long Time out of the Ground, therefore whoever hath a Mind to get any of them from the *Weſt-Indies*, need give no other Inſtructions to their Friends, but to cut them off, and let them lie 2 or 3 Days to dry, then put them up in a Box with dry Hay, or Straw, to keep them from wounding each other with their Spines, and if they are 2 or 3 Months on their Paſſage, they will keep very well, provided no Wet get to them.

CERINTHE. *Lin. Gen. Plant.* 171. *Tourn. Inſt. Raii Meth. Plant.* 57. Honeywort, in *French*, *Melinet*.

The *Characters* are,

It hath an oblong permanent Empalement, cut into five equal Parts. The Flower hath one Petal, having a thick ſhort Tube, which ſwells upward much thicker, and at the Brim is quinquefid; the Chaps are naked and pervious; it hath five ſhort Stamina, terminated by pointed upright Summits. In the Bottom are ſituated four Germen, ſupporting a ſlender Style the Length of the Stamina, crowned by an obtuſe Stigma; two of the Germen afterward become ſo many Seeds, which are hard, ſmooth, plain on one Side, but convex on the other, and are incloſed in the Empalement.

The *Species* are,

1. CERINTHE *foliis ovato-oblongis, aſperis, amplexicaulibus, corollis obtuſiuſculis, patulis.* Honeywort with oval, oblong, rough Leaves embracing the Stalk, and ſpreading blunt Petals. This is the *Cerinthe quorundam major, ſpinoſo folio, flavo flore. J. B.* 3. 602. Greater Honeywort with a prickly Leaf, and a yellow Flower.

2. CERINTHE *foliis oblongo-ovatis, glabris, amplexicaulibus, corollis obtuſiuſculis, patulis.* Honeywort with oblong, oval, ſmooth Leaves, embracing the Stalks, and a ſpreading blunt Petal. *Cerinthe flore rubro purpuraſcente. C. B. P.* 258. Honeywort with a purpliſh red Flower.

3. CERINTHE *foliis amplexicaulibus, integris, fructibus geminis corollis acutis, clauſis. Lin. Sp. Plant.* 137. Honeywort with entire Leaves, embracing the Stalk, a double Fruit, and a pointed cloſed Petal. This is the *Cerinthe minor. C. B. P.* 258. Smaller Honeywort.

4. CERINTHE *foliis amplexicaulibus emarginatis, fructibus geminis, corollis acutis clauſis. Lin. Sp. Plant.* 137. Honeywort with Leaves embracing the Stalks, and indented at their Points, a double Fruit, and a pointed cloſed Petal. This is the *Cerinthe ſine Cynogloſſum montanum majus. C. B. P.* 258. Honeywort, or Greater Mountain Hounds Tongue.

5. CERINTHE *foliis lanceolato-linearibus hiſpidis, ſeminibus quaternis diſtinctis. Hort. Cliff.* 48. Honeywort with narrow Spear-ſhaped Leaves, which are ſet with prickly Hairs, and four diſtinct Seeds. This is the *Anchuſa lutea major. C. B. P.* Greater Yellow *Alkanet*.

The firſt Sort grows naturally in *Germany* and *Italy*. This is an annual Plant, which riſes with ſmooth branching Stalks a Foot and a Half high, garniſhed with oval, oblong, rough Leaves, of a Sea-green, ſpoted with white, and embrace the Stalks with their Baſe; the Flowers are produced at the End of the Branches, ſtanding between the ſmall Leaves, which embrace the Stalks; theſe are long, tubulous, and blunt at Top, where the Tube is greatly enlarged; they are yellow, and have a mellous Liquor in their Tubes, with which the Bees are much delighted; they have an herbaceous Empalement, cut into five Parts, which afterwards incloſes the Seeds; theſe Flowers have each four Embryos, or Germen, but only two of them are fruitful. The Top of the Stalks are reflexed backward, ſomewhat like thoſe of Turnſole. It flowers in *June* and *July*, and the Seeds ripen in *Auguſt* and *September*. If the Seeds are not taken as ſoon as they change black, they drop out of the Empalement, and ſo unleſs carefully gathered up, will vegetate with the firſt moiſt Weather.

The 2d Sort is like the firſt, but the Leaves are larger, and ſmooth, having no Prickles on them; the Flowers are of a purpliſh red Colour, and the Plants grow larger. This grows in *Italy*, and is alſo annual.

The 3d Sort grows naturally on the *Alps*, and other mountainous Places; this hath ſlenderer Stalks than either of the former, which riſe two Feet high, and cloſer garniſhed with Leaves than either of the others; theſe embrace the Stalks with their Baſe, and are of a bluer green Colour. The Flowers are ſmall, their upper Part is deeply cut into five Segments, but the Mouth of the Tube is cloſely ſhut up, the Empalement is large, and cloſely ſurrounds the Flower. The Flowers are yellow, and appear at the ſame Time with the other Sorts. If the Seeds of this are permited to ſcatter, the Plants will come up in Autumn, and will grow much taller, and flower earlier than thoſe ſown in Spring; this has been ſuppoſed perennial by many, but from many Years Obſervation, I could never find theſe Plants continue after they had perfected their Seeds.

The 4th Sort is very like the 3d, but the Leaves are not ſpoted, and are indented. The Flowers are ſmaller, not ſo deeply cut at Top, and the Segments more acute.

The 5th Sort grows naturally in *Auſtria*, *Hungary*, and *Italy*; this hath long, narrow, thick Leaves, covered cloſely with prickly Hairs, and lie upon the Ground; between theſe come out the Stalk, which riſes a Foot high, garniſhed at each Joint with one Leaf of the ſame Sort, but ſmaller; theſe are placed alternately on the Stalks, and toward the upper Part they branch out into two or three ſmaller, upon which the Flowers ſtand between the Leaves, and form a ſhort reflexed Spike, like the true *Alkanet*. The Flowers are of a pale yellow, ſhaped like thoſe of the other Sorts, but ſmaller. This is a biennial Plant when cultivated in a Garden, though moſt of the Writers on Botany have ſuppoſed it to be perennial.

There are two Varieties of the 1ſt Sort, which differ only in the Colour of their Flowers, ſo are not conſtant.

The ſeveral Varieties of this Plant are propagated by Seeds, which ſhould be ſown ſoon after they are ripe; for, if kept till Spring, their growing Quality is often loſt; the Plants are hardy, and if the Seeds are ſown in a warm Situation, they will endure the Winter's Cold without Shelter; theſe autumnal Plants are alſo much ſurer to produce ripe Seeds than thoſe ſown in Spring, which are generally late in the Seaſon before they flower; and conſequently if the Autumn ſhould not prove very warm, their Seeds would not be perfected.

Theſe Plants are pretty Varieties for large Borders, where, if they are ſuffered to drop their Seeds, the Plants will riſe without any farther Care, ſo that when a Perſon is once furniſhed with the ſeveral Varieties, he need be at no more Trouble than to allow each Sort a Place where it may remain, and ſow itſelf; with this Culture, there is a greater Certainty of preſerving the Sorts than in any other Management; nor will they perhaps be entirely loſt in this Way, if it ſhould happen that the Seaſon ſhould prevent their ripening Seed (as it ſometimes proves); for when great Quantities of the Seeds have ſcattered upon the Ground, ſome of them will be buried ſo deep, in ſtirring the Earth, as not to grow the firſt Year; which, upon being turned up to the Air the ſucceeding Year, will come up as well as new Seeds.

CESTRUM. *Lin. Gen. Plant.* 231. *Jaſminoides. Dill. Nov. Gen.* 170. Baſtard Jaſmine.

The *Characters* are,

It hath a ſhort tubular Empalement of one Leaf, indented at the Top into five Parts; which are erect. The Flower is Funnel-ſhaped, of one Petal, having a long cylindrical Tube, which ſpreads open at the Top, where it is cut into five equal Segments; it hath five ſlender Stamina the Length of the Tube to which they adhere, and are terminated by roundiſh four cornered Summits. The oval cylindrical Germen is ſituated in the Empalement, ſupporting a ſlender Style the Length of the Stamina, crowned by an obtuſe thick Stigma. The Germen afterward becomes an oval oblong Berry, with one Cell, incloſing ſeveral roundiſh Seeds.

The *Species* are,

1. CESTRUM *floribus pedunculatis. Hort. Cliff.* 490. *Ceſtrum* with Flowers ſtanding upon Foot Stalks. This is the *Jaſminoides foliis Piſhaminis, flore vireſcente noctu odoratiſſimo. Hort. Elth.* 183. *Tab.* 153. Baſtard Jaſmine with Leaves of Piſhamin, and a greeniſh Flower, ſmelling very ſweetly in the Night.

2. CESTRUM *floribus ſeſſilibus. Hort. Cliff.* 491. *Ceſtrum* with Flowers growing to the Branches. This is the *Jaſminoides Laureolæ folio, flore candido interdiu odorato. Hort. Elth.* 186. Baſtard Jaſmine with a Spurge Laurel Leaf, and a white Flower, ſmelling in the Day.

3. CESTRUM *foliis lanceolatis oppoſitis nervis tranſverſalibus, pedunculis ramoſis. Ceſtrum* with Spear-ſhaped Leaves growing oppoſite, having tranſverſe Veins, and branching Foot Stalks to the Flowers. This is the *Jaſminoides Americanum, lauri folio, flore albo odorato. Houſt. Mſſ.* Baſtard Jaſmine of *America* with a Bay Leaf, and a white ſweet ſmelling Flower.

4. CESTRUM *foliis ovato-lanceolatis, floribus ſpicatis, alaribus & terminalibus. Ceſtrum* with oval Spear-ſhaped Leaves, and Flowers growing in Spikes from the Sides and Tops of the Branches.

5. CESTRUM *foliis oblongo-ovatis, obliquis, floribus alaribus confertis, tubo longiſſimo & tenuiſſimo. Ceſtrum* with oblong oval Leaves which are oblique, and Flowers growing in Cluſters from the Sides of the Branches, with a very long, ſlender Tube.

6. CESTRUM *foliis lanceolatis obliquis, floribus alaribus, pedunculis folioſis. Ceſtrum* with oblique Spear-ſhaped Leaves, Flowers proceeding from the Sides of the Branches, and leafy Foot Stalks. This is the *Jaſminum laurinis foliis; flore pallidè luteo fructu atrocæruleo polypyreno venenato. Sloan. Hiſt. Jam.* 2. p. 196. Jaſmine with Bay Leaves, a pale yellow Flower, and a dark blue Fruit with many Seeds, which are poiſonous.

The 1ſt Sort was many Years paſt raiſed in the curious Gardens of the Ducheſs of *Beaufort*, at *Badmington*, in *Glouceſterſhire*, and was from thence communicated to ſeveral Gardens in *England* and *Holland*, where in the latter it paſſes under the Title of *Badmington* Jaſmine to this Time. This grows naturally in the Iſland of *Cuba*, from whence I received the Seeds by the Title of *Dama de Noche. i. e.* Lady of the Night, which Appellation I ſuppoſe was given it from the Flowers ſending out a ſtrong Odour after the Sun is ſet.

It riſes with an upright Stalk about ſix or ſeven Feet high, which is covered with a grayiſh Bark, and divides upward into many ſlender Branches, which generally incline to one Side; theſe are garniſhed with Leaves placed alternate, near four Inches long, and one and a Half broad, ſmooth on their upper Side, of a pale green, and on their under Side they have ſeveral tranſverſe Veins of a Sea-green Colour, having ſhort Foot Stalks, the Flowers are produced at the Wings of the Leaves, in ſmall Cluſters, ſtanding on ſhort Foot Stalks, each ſuſtaining 4 or 5 Flowers, which have very ſhort Empalements, with long ſlender Tubes inlarged at the Top, where they are cut into five Parts which are reflexed; theſe are of an herbaceous Colour; they appear in *Auguſt*, but are not ſucceeded by Berrries in this Country ; thoſe I received from *America* were ſmall, and of a dark brown Colour, encloſing ſeveral Seeds.

The Seeds of the 2d Sort were ſent me from the *Havannah*, by the Title of *Dama de Dio*, or Lady of the Day ; this riſes 8 or 10 Feet with an upright Stalk covered with a ſmooth light green Bark, and divides upward into many ſmaller Branches, garniſhed with ſmooth Leaves near three Inches long, and one and a Half broad, of a lively green Colour, and the Conſiſtence of thoſe of the Spurge Laurel ; theſe are ranged alternately on the Branches. Toward the upper Part of the Shoots come out the Flowers from the Wings of the Leaves, ſtanding in Cluſters cloſe to the Branches ; they are very white, ſhaped like thoſe of the former Sort, and ſmell ſweet in the Day Time, from whence it had the Appellation of Lady of the Day. The Berries are ſmaller than thoſe of the 1ſt Sort. This flowers in *Auguſt* and *September*.

The 3d Sort was ſent me from *Carthagena*, near which Place it grows naturally ; this riſes with a ſhrubby Stalk, 5 or 6 Feet high, covered with a brown Bark, and divides upward into many ſmall Branches, garniſhed with Spear-ſhaped Leaves, about four Inches long, and little more than one broad ; theſe are ſmooth, of a light green, and have many horizontal Veins running from the Midrib to the Sides, and are placed oppoſite by Pairs. From the Wings of the Leaves, toward the upper Part of the Branches, are produced the Flowers, ſtanding on branching Foot Stalks, each ſuſtaining four or five Flowers, whoſe Tubes are ſwelling at their Baſe juſt above the Empalement, but contract upward to the Mouth, where the Petal is cut into five broad Segments ſpread flat ; they are white, but without Scent.

The 4th Sort was ſent me with the former. This riſes with a ſhrubby Stalk, ten or twelve Feet high, covered with a light gray Bark, and ſends out many Branches the whole Length, garniſhed with oval Spear-ſhaped Leaves, ſtanding without Order ; they are two Inches and a Half long, and one and a Half broad, of a light green, with ſlender Foot Stalks. The Flowers come out in loſe Spikes from the Side, and at the End of the Branches, which are ſhaped like thoſe of the 1ſt Sort, and of a whitiſh green Colour, without Scent. Theſe are ſucceeded by roundiſh purple Berries, the Size of large Peas, which have a ſoft Juicy Pulp, filled with flat Seeds.

The 5th Sort riſes with ſeveral ſhrubby Stalks, eight or ten Feet high, covered with a white ſmooth Bark, and ſend out many irregular Branches, garniſhed with oblong oval Leaves, which at their Baſe are longer on one Side, ſo that the Foot Stalk is oblique ; they are placed on the Branches without Order, and are of a pale green. The Flowers come out in Cluſters from the Side of the Branches, many of them ariſing from the ſame Point ; theſe have very ſlender long Tubes, which are cut at the Top into five acute Segments which are erect. Theſe are of a pale yellow, and without Scent.

The 6th Sort grows naturally in *Jamaica*, from whence it was ſent me. This riſes with a woody Stem, 8 or 9 Feet high, covered with a ſmooth whitiſh Bark, and ſends out many Branches toward the Top, garniſhed with Spear-ſhaped Leaves, whoſe Foot Stalks are oblique ; they are three Inches long, and little more than one broad, ſmooth, of the Conſiſtence of Bay Leaves, and are placed alternate on the Branches. From the Wings of the Leaves the Flowers are produced, moſt Part of the Length of the Branches ; the Foot Stalks of the Flowers are garniſhed with ſmall Leaves, ſtanding between each Flower in a ſingular Manner, the Flowers riſing one above the other, and between, or oppoſite to each, is one, and ſometimes two Leaves of the ſame Form with thoſe on the Branches. The Flowers are of a pale yellow, and emit a diſagreeable Odour. Theſe are ſucceeded by oval Berries of a Violet Colour, full of Juice, each containing ſeveral flat Seeds reckoned very poiſonous, ſo have the Appellation of Poiſon Berries in *Jamaica*.

This has been, by many of the Writers on Botany, ſuppoſed to be the ſame with the 1ſt; but any Perſon who has ſeen both Sorts growing, cannot doubt of their being diſtinct Species, the Shape and Size of the Leaves are very different, as are alſo their Flowers and Berries. Some have alſo ſuppoſed that the *Parqui* of *Pere Feuilleé*, is the ſame with this ; but that is a great Miſtake ; for the Flowers of his Plant are produced in looſe Bunches, at the Extremity of the Branches, whereas thoſe of this Sort, come out from the Side, at the Foot Stalks of the Leaves ; ſo that his Plant is certainly different from either of theſe, but approaches neareſt to the third.

The fifth Sort I take to be the ſame as *Pere Plumier's Jaſminum aliud arboreſcens, foliis ſolani, minus.*

The 1ſt and 2d Sorts produce Flowers every Year in *England*, but the others ſeldom flower here; but as they retain their Leaves all the Year, they make a pretty Variety in the Stove, during the Winter Seaſon ; and when they flower, the Branches are commonly well garniſhed at their Joints with Bunches of Flowers, ſo they make a fine Appearance at that Time.

All theſe Plants grow naturally in very hot Countries, ſo cannot be preſerved in *England*, without artificial Heat ; therefore require to be placed in a warm Stove, eſpecially in the Winter. The two firſt are hardier than the others ; theſe I have kept ſeveral Years in a dry Stove, with a moderate Share of Heat in the Winter, and in the Middle of Summer have ſet them in the open Air, in a warm Situation. With this Management I have found them thrive, and produce Flowers much better than when they have been placed in a greater Heat ; but I have often endeavoured to keep theſe Plants through the Winter, in a Green-houſe, or a Glaſs Caſe, without Fire, but could never ſucceed ; for by the End of *January* they commonly decayed.

The other Sorts require a larger Share of Heat, eſpecially when the Plants are young ; therefore they ſhould be plunged in the Tan Bed of the Bark Stove, otherwiſe they will loſe their Leaves in Winter, if they are not quite deſtroyed ; but after three or four Years Growth, they will bear to be treated more hardily, provided they are inured to it gradually.

Theſe Plants may be propagated from Seeds, or by Cuttings. Thoſe from Seeds are always the moſt vigorous, and ſtraiteſt Plants ; but as they do not produce Seeds in *England*, the other Method is generally practiſed.

The beſt Time to plant theſe Cuttings, is about the End of *May*, by which Time the Shoots will have had Time to recover Strength, after their Confinement during the Winter Seaſon. The Shoots which come out from the lower Part of the Stalks, ſhould always be choſen for this Purpoſe. Theſe ſhould be cut about four

Inches long, and five or ſix of them may be planted in each Halfpenny Pot, for the Cuttings of moſt Sorts of exotick Plants, will ſucceed better when planted in ſmall Pots, than they do in larger, as I have many Years experienced. The Earth in which theſe are planted, ſhould be freſh and light, but not full of Dung; when the Cuttings are planted, the Earth muſt be preſſed cloſe to them, and then gently watered; after which the Pots muſt be plunged into a moderate hot Bed of Tanners Bark, and every Day ſhaded from the Sun. They muſt have freſh Air admited to them in warm Weather, and two or three Times a Week refreſhed with Water. With this Management the Cutings will put out Roots in a Month or five Weeks, when they ſhould be gradually expoſed to the Sun, and when they begin to put out Shoots, they muſt have a greater Share of freſh Air, to prevent their drawing up weak; and their Waterings ſhould be oftener repeated, but given in ſmall Quantities, for their young tender Fibres will not endure much Wet. When they have made good Roots, they ſhould be carefully ſhaken out of the Pots, and put each into a ſmall Pot, filled with the ſame Sort of Earth as before, then give them ſome Water, to ſettle the Earth to their Roots, and plunge them again into the Tan Bed; obſerving if any of their Leaves hang down, to ſhade them from the Sun in the Middle of the Day, until they have taken freſh Root; after which they ſhould have a large Share of Air in warm Weather, to ſtrengthen them before Winter. Their Waterings in Summer ſhould be frequent; and if ſprinkled all over their Leaves, it will waſh and cleanſe them from Filth, which will greatly promote their Growth; but their Roots muſt not be kept too moiſt.

In Autumn the Plants muſt be removed into the Bark Stove, and plunged in the Tan Bed, where they muſt be treated as other tender exotick Plants; for although the two firſt Sorts may be treated otherwiſe, when they have obtained Strength, yet the firſt Winter they muſt be managed as the others. There muſt be great Care had in watering theſe Plants in Winter, for they are all (except the 2d Sort) very impatient of Moiſture; and are ſoon killed by being over watered.

If the Seeds of theſe are procured from the Countries where they grow naturally; they ſhould be ſowed in ſmall Pots filled with the Earth before directed, and plunged into a moderate hot Bed of Tanners Bark, giving them now and then a little Water. Sometimes the Seeds will come up the ſame Year, but they very often lie in the Ground till the Spring following; ſo that if the Plants do not appear in ſix or ſeven Weeks after the Seeds are ſown, they will not come up that Seaſon; in which Caſe the Pots may be plunged in the Tan Bed of the Stove, between the other Plants, where they will be ſhaded from the Sun, and but little Water given them; in this Situation they may remain till the following Spring, when they ſhould be removed, and plunged into a freſh hot Bed, which will bring up the Plants in a ſhort Time, provided the Seeds were good.

When the young Plants are fit to remove, they ſhould be carefully ſhaken out of the Pots, and each planted in a ſeparate Pot filled with Earth as before, and plunged into the hot Bed again, and afterwards treated as hath been directed for the Plants raiſed from Cuttings.

CETERACH. *See* Aſplenium.

CHÆROPHYLLUM *Lin. Gen. Plant.* 320. *Tourn. Inſt. R. H.* 314. *Tab.* 166. Chervil.

The *Characters* are,

It is a Plant with Flowers growing in an Umbel, the principal Umbel is ſpreading, and compoſed of ſeveral ſmall ones, called Rays; the principal Umbel hath no Involucrum, the ſmall ones have a 5 leaved, which is reflexed; the Flowers have 5 heart-ſhaped inflexed Petals; they have 5 Stamina, terminated by roundiſh Summits: The Germen is ſituated below the Flower, ſupporting two reflexed Styles, crowned with obtuſe Stigmas. The Germen becomes an oblong pointed Fruit, dividing in two Parts, each having one Seed, which is convex on one Side, and plain on the other.

The *Species* are,

1. CHÆROPHYLLUM *floſculis omnibus fertilibus, caule æquali. Lin. Sp. Pl.* 258. Chervil whoſe Flowers are all fertile, and a Stalk equal. *Myrrhis ſylveſtris ſeminibus lævibus. C. B. P.* Wild Myrrh with Smooth Seeds.

2. CHÆROPHYLLUM *caule lævi, geniculis tumidis. Lin. Sp. Pl.* 258. Chervil with a ſmooth Stalk, and ſwelling Knots. *Myrrhis tuberoſa & nodoſa conyophillon. Mor. Umb.* Tuberous and knotted Myrrh with a Hemlock Leaf.

3. CHÆROPHYLLUM *caule ſcabro, geniculis tumidis. Lin. Sp. Pl.* 258. Chervil with a rough Stalk, and ſwelling Knots. *Chærophyllum ſylveſtre. C. B. P.* Wild Chervil.

4. CHÆROPHYLLUM *caule æquali, foliolis inciſis acutis. Lin. Sp. Pl.* 258. Chervil with an equal Stalk, and Leaves cut into acute Segments. This is the *Cerefolium latifolium hirſutum album & rubrum Mor. Hiſt.* 3. *p.* 304. Hairy broad leaved Chervil with white and red Flowers.

5. CHÆROPHYLLUM *ſeminibus lævibus, umbellis ad nodos ſeſſilibus. Bahm. lipſ.* 492. Chervil with ſmooth Seeds, and Umbels ſitting cloſe to the Knots. This is the *Chærophyllum ſativum. C. B. P.* Garden Chervil

The 1ſt Sort grows naturally on the Side of Highways, and the Borders of Fields in *England*, ſo is never cultivated in Gardens. It is called Cow Parſley, but for what Reaſon I cannot ſay, becauſe there are few Animals who care to eat it, except the Aſs, for it is reckoned to have ſomething of the Quality of Hemlock, but in a leſs Degree. It is a Weed which ſhould be rooted out from all Paſtures early in the Spring, for it is one of the moſt early Plants in ſhooting, ſo that by the Beginning of *April*, the Leaves are near two Feet high. The Seeds ſpread greatly over the Ground, and as the Roots are perennial, they are often very troubleſome Weeds to deſtroy.

The 2d Sort grows naturally in *Hungary* and *Iſtria*; this Plant hath a thick tuberous Root, from which come forth ſeveral Leaves reſembling Wild Chervil, which ſpread horizontally near the Ground. The Stalks riſe 6 or 7 Feet high, ſpoted with purple, and garniſhed with Leaves of the ſame Form as thoſe below. The Knots at the Joints of the Stalks ſwell out on every Side, at which is placed one of thoſe divided Leaves, and the Stalks are terminated by ſmall Umbels of white Flowers, which are ſucceeded by long narrow Seeds. It flowers in *June*, and the Seeds ripen in *Auguſt*. If the Seeds are permited to ſcatter, the Plants will come up without any farther Care, and only require to be kept clean from Weeds.

The 3d Sort grows naturally on the Sides of Foot Walks in *England*, ſo is not cultivated in Gardens.

The 4th Sort grows naturally in the Paſtures about *Geneva*;

Geneva; this hath a perennial Root, from whence comes out in Spring many Leaves, ſhaped like thoſe of the 1ſt, but broader, hairy, and more divided. The Stalks riſe 3 Feet high, which are channeled, and garniſhed with the like Leaves; theſe are terminated by large Umbels, formed of many ſmall ones, compoſed of white or red Flowers, ſometimes both Colours in the ſame Umbel, having five Heart-ſhaped Petals, which turn inward; theſe are ſucceeded by two long pointed Seeds; the whole Plant has an aromatick Smell and Taſte.

The 4th Sort is the Garden Chervil, formerly much more cultivated in the *Engliſh* Gardens, than at preſent; this is an annual Plant, which periſhes ſoon after the Seeds are ripe. The beſt Time to ſow the Seeds is in Autumn, ſoon after they are ripe, for thoſe ſown in Spring rarely come up, and if they do, the Plants never thrive; for as ſoon as the warm Weather ſets in they ſoon wither and decay, but the Plants which riſe in Autumn, continue green all the Winter, and in *April* they flower, ſoon after which the Seeds ripen, and the whole Plants decay.

The Leaves are frequently uſed in Soups in Winter and Spring by the *Dutch*, who are great Lovers of this Herb, but whoever makes uſe of it ſhould be cautious not to take the Leaves of the Annual Myrrhis, inſtead of this, as ſome of the *Dutch* Soldiers who were in *England*, in 1745, did, and were poiſoned with it.

It will thrive in any Soil, or Situation. The Seeds may be either ſown in Drills, or Broad-caſt, and require no particular Culture, ſo may be treated as Parſley.

CHAMÆCERASUS. *See* Ceraſus and Lonicera.

CHAMÆCISTUS. *See* Helianthemum.

CHAMÆCLEMA. *See* Glechoma.

CHAMÆCYPARISSUS. *See* Santolina.

CHAMÆDAPHNE. *See* Ruſcus.

CHAMÆDRYS. *See* Teucrium.

CHAMÆLÆA. *See* Cneorum.

CHAMÆMELUM. *See* Anthemis.

CHAMÆMESPILUS. *See* Meſpilus.

CHAMÆMORUS. *See* Rubus.

CHAMÆNERION. *See* Epilobium.

CHAMÆPITYS. *See* Teucrium.

CHAMÆRHODODENDRON. *See* Azalea and Kalmia.

CHAMÆRIPHES. *See* Chamærops.

CHAMÆROPS. *Lin. Gen. Plant.* 1084. *Chamæriphes. Dod. Pempt.* 820. Dwarf Palm, or Palmetto.

The *Characters* are,

It hath male and hermaphrodite Flowers in diſtinct Plants, the hermaphrodite Flowers are all included in one common Spatha (or Hood) which is compreſſed and bifid, and the Spadix, or Club, is branching; each Flower hath a ſmall three pointed Empalement; they have one thick upright Petal, which is cut into three Parts, and turns inward at the Top, and five compreſſed Stamina which join at their Baſe, terminated by narrow twin Summits, joined to the interior Part of the Stamina. They have three roundiſh Germen, each having a diſtinct Style, which is permanent, terminated by pointed Stigma. The three Germen become ſo many round Berries, having one Cell, each containing a ſingle Seed. The male Flowers are like the hermaphrodite, but the Stamina are not diſtinct, nor have they any Germen.

The *Species* are,

1. CHAMÆROPS *frondibus palmatis, plicatis, ſtipitibus ſpinoſis. Hort. Cliff.* 482. Dwarf Palm with folding palmated Leaves, and prickly Foot Stalks. This is the *Palma humilis ſ. Chamæriphes. J. B. Hiſt.* 1. 368. Dwarf Palm, or Palmetto.

2. CHAMÆROPS *foliis flabelliformibus, maximis, ſtipitibus glabris.* Dwarf Palm with very large Fan-ſhaped Leaves, and ſmooth Foot Stalks. This is the *Palma non ſpinoſo humilima.* Dwarf Palm without Spines, commonly called ſmall Palmetto Royal.

The firſt grows naturally in *Spain*, particularly in *Andaluſia*, where, in the ſandy Land, the Roots ſpread and propagate ſo faſt, as to cover the Ground as the Fern in *England*. The Leaves of theſe Plants are tied together to make Beſoms for ſweeping.

This never riſes with a Stem, but the Foot Stalks of the Leaves riſe immediately from the Head of the Root, and are armed on each Side with ſtrong Spines, they are flat on their upper Surface, and convex on their under; to their Ends the Center of the Leaves are faſtened, which ſpread open like a Fan, having many Foldings, and at the Top are deeply divided like the Fingers of a Hand. When they firſt come out, they are cloſed together like a Fan when ſhut, and are faſtened together by ſtrong Fibres which run along the Borders of the Leaves, and when the Leaves ſpread open, theſe Fibres, or Strings, hang from the Sides and Ends; the Borders of the Leaves are finely ſawed, and have white narrow Edgings; theſe Leaves ſpread out on every Side of the Plant, they are from 9 to 18 Inches long, and near a Foot broad in their wideſt Part; as the lower Leaves of the Plants decay, their Veſtiges remain, and form a ſhort Stump above Ground, like our common male Fern; from between the Leaves comes out the Spadix, or Club, which ſuſtains the Flowers; this is covered with a thin Spatha, or Hood, which falls off when the Bunches open and divide. As all the Plants of this Sort which I have ſeen flower were male, ſo I cannot give any Deſcription of their Fructification.

This Plant is commonly propagated here by Heads, which ſeparate frequently from the main Root; if theſe are carefully taken off with Fibres, and planted, they will grow, but the Plants ſo raiſed are not ſo good as thoſe produced from Seeds, ſo that if good Seeds can be procured, that is by much the better Way to propagate them. The Seeds ſhould be ſown in ſmall Pots filled with light ſandy Earth, and plunged into a moderate hot Bed of Tanners Bark; theſe muſt be refreſhed now and then with Water. If the Seeds are freſh, the Plants will come up in ſix Weeks; they riſe with a ſingle long pointed Leaf. When they appear they muſt be now and then refreſhed with Water, but not in too great Plenty. If the Plants are not too cloſe to each other in the Pots, they will not require to be tranſplanted the firſt Year, therefore they ſhould remain in the Tan Bed all the Summer, but in warm Weather they muſt have Plenty of Air admitted to them. In Autumn the Pots ſhould be removed into the Stove, and, if plunged in the Bark Bed the firſt Winter, it will greatly forward the Growth of the Plants. The following Spring the Plants ſhould be carefully turned out of the Pots, ſo as to preſerve their Roots entire, for all the Sorts of Palms have tender Roots, which if cut off, or broken, frequently kills the Plants;

then they ſhould be each planted in a ſmall Pot filled with light ſandy undunged Earth, and plunged into a freſh hot Bed, to encourage their taking Root; the following Summer they ſhould be gradually hardened, by raiſing the Glaſſes pretty high, ſo as to admit a large Share of Air, but they ſhould not yet be wholly expoſed to the open Air. The Autumn following the Plants may be placed in a dry Stove, but as they advance and get Strength, may be treated more hardily, and in Summer placed in the open Air in a warm Situation, and in Winter may be preſerved in a warm Green-houſe without artificial Heat.

As the Plants advance in Growth, they ſhould be put into larger Pots, but when this is done, great Care muſt be taken, that their Roots are not cut or broken, nor ſhould they have Pots too large. In Winter they muſt have but little Water, but if they are expoſed to the open Air in Summer, they will not require much, unleſs the Seaſon proves very warm and dry, in which Caſe they may be ſparingly watered two or three Times a Week.

The 2d Sort grows naturally in the *Weſt-Indies*, where it never riſes with a Stem; the Foot Stalks of the Leaves are rounder than the former, and have no Spines on their Sides. When the Plants are old their Leaves are 3 or 4 Feet long, and upward of two broad; theſe are folded as thoſe of the firſt, but the Folds are broader, and the Leaves of a darker green; ſome of theſe have put out ſlender Bunches of male Flowers in *England*, but were too imperfect to form a Deſcription.

This Sort riſes freely from Seeds; which may be eaſily procured from the Iſlands in *America*; theſe muſt be ſown as the former, and the Plants treated in the ſame Way, but as they are Natives of a warmer Climate, ſhould be conſtantly kept in the Bark Stove, where, if carefully managed, they will make good Progreſs.

I have received Seeds from *Carolina* of a Dwarf Palm, which is very like this, if not the ſame, but the Plants do not make ſo good Progreſs here, as thoſe which came from *Jamaica*, the Berries were ſo like, that I could not diſtinguiſh them.

CHAMÆRUBUS. *See* Rubus.

CHAMÆSYCE. *See* Euphorbia.

CHEIRANTHUS. *Lin. Gen. Plant.* 730. *Leucojum. Tourn. Inſt. R. H.* 220. *Tab.* 107. Stock Gilliflower and Wall-flower, in *French Giroflier ou Violier.*

The *Characters* are,

It hath a four leaved compreſſed Empalement; the two outer Leaves are ſwelling at their Baſe. The Flower hath four Petals placed in form of a Croſs; theſe are longer than the Empalement. It hath ſix parallel Stamina, the Length of the Empalement, two of which are between the ſwelling Leaves of the Empalement, the others are a little ſhorter, and are terminated by erect bifid Summits, reflexed at the Top. It hath a four cornered priſmatick Germen, as long as the Stamina, ſupporting a very ſhort compreſſed Style, crowned with an oblong divided Stigma, which is reflexed and permanent. The Germen becomes a long compreſſed Pod with two Cells, opening with two Valves, filled with compreſſed Seeds.

The *Species* are,

1. CHEIRANTHUS *foliis lineari lanceolatis dentatis caule recto, ſiliquis tetragonis. Cheiranthus* with narrow, indented, Spear-ſhaped Leaves, an upright Stalk, and four-cornered Pods. This is the *Heſperis leucoii folio ſerrato, ſiliquâ quadrangulâ. Tourn. Inſt.* Dames Violet with a ſawed Wall-flower Leaf, and a quadrangular Pod.

2. CHEIRANTHUS *foliis lanceolatis integerrimis, caule recto, ſiliquis tetragonis. Cheiranthus* with Spear-ſhaped entire Leaves, an upright Stalk, and quadrangular Pods. This is the *Heſperis leucoii folio non ſerrato, ſiliquâ quadrangulâ Tourn. Inſt.* Dames Violet with a Wall-flower Leaf not ſawed, and a quadrangular Pod.

3. CHEIRANTHUS *foliis lanceolatis, acutis, glabris. Hort. Cliff.* 334. *Cheiranthus* with Spear-ſhaped, pointed, ſmooth Leaves. This is the *Leucojum luteum vulgare. C. B. P.* Common yellow Wall-flower.

4. CHEIRANTHUS *foliis linearibus, unguibus petalorum Calyce longioribus. Cheiranthus* with narrow Leaves, and the Necks of the Petals longer than the Empalement. This is the *Leucojum anguſtifolium Alpinum flore ſulphureo. H. R. Par.* Narrow leaved Wall-flower of the *Alps*, with a Sulphur-coloured Flower.

5. CHEIRANTHUS *foliis lanceolatis, ſubdentatis, obtuſis, incanis, ſiliquis cylindricis apice acutis, caule herbaceo. Lin. Sp. Plant.* 662. *Cheiranthus* with Spear-ſhaped Leaves, ſomewhat indented, obtuſe, and hoary; cylindrical Pods with acute Points, and an herbaceous Stalk. *Leucojum incanum minus. C. B. P.* 200. Leſſer hoary Stock Gilliflower, commonly called Ten Weeks Stock.

6. CHEIRANTHUS *foliis lanceolatis, integerrimis, obtuſis, incanis, ſiliquis apice truncatis, compreſſis, caule ſuffruticoſo. Hort. Up.* 187. *Cheiranthus* with very entire Spear-ſhaped Leaves, obtuſe and hoary, compreſſed Pods with truncated Points, and a ſhrubby Stalk. This is the *Leucojum incanum majus. C. B. P.* 200. Greater hoary Stock Gilliflower, commonly called the Queen's Stock Gilliflower.

7. CHEIRANTHUS *foliis lanceolatis undatis, caule erecto indiviſo. Cheiranthus* with waved Spear-ſhaped Leaves, and an upright undivided Stalk. This is the *Leucojum incanum majus Coccineum Mor. Hiſt.* 2. 240. Greater hoary Stock Gilliflower with a ſcarlet Flower, commonly called the *Brompton* Stock Gilliflower.

8. CHEIRANTHUS *foliis lanceolatis, integerrimis, obtuſis, incanis, ramis floriferis axillaribus, caule ſuffruticoſo. Cheiranthus* with hoary, entire, Spear-ſhaped, obtuſe Leaves, Flower Branches proceeding from the Sides, and a ſhrubby Stalk. This is the *Leucojum album ſive purpureum ſive violaceum. Ger.* The white, purple, or violet Stock Gilliflower.

9. CHEIRANTHUS *foliis lanceolatis, acutis, petiolatis, viridibus, caule ſuffruticoſo. Cheiranthus* with Spear-ſhaped acute green Leaves, Foot Stalks, and a ſhrubby Stalk. This is the *Leucojum album odoratiſſimum, folio viridi. C. B. P.* Sweeteſt white Stock Gilliflower with a green Leaf, commonly called white Wall-flower.

10. CHEIRANTHUS *foliis conferto-capitatis, recurvatis, undatis. Lin. Sp. Plant. App.* 1198. *Cheiranthus* with Leaves growing cloſe together in Heads, which turn backward, and are waved.

11. CHEIRANTHUS *foliis linearibus, obtuſis, incanis, integerrimis, ſiliquis acuminatis, caule ſuffruticoſo. Cheiranthus* with narrow obtuſe Leaves, which are hoary, and very entire ſharp pointed Pods, and a ſhrubby Stalk. This is the *Leucojum maritimum anguſtifolium. C. B. P.* 221. Narrow leaved Sea Stock Gilliflower.

12. CHEIRANTHUS *caule diffuſo, foliis lanceolatis, ſeſſilibus,*

libus, floribus alternis. Cheiranthus with a diffuſed Stalk, Spear-ſhaped Leaves ſitting cloſe to the Stalks, and Flowers placed alternate. *Heſperis maritima, ſupina, exigua. Tourn. Inſt.* Low, maritime Dames Violet, commonly called Dwarf, or *Virginia* Stock Gilliflower.

13. Cheiranthus *foliis lanceolatis, ſubdentatis, retuſis; ſiliquis apice ſubulatis. Hort. Up.* 187. *Cheiranthus* with Spear-ſhaped Leaves, indented at Bottom, and Pods with Awl-ſhaped Points. This is the *Heſperis ſiliquis hirſutis flore parvo rubello. Hort. Elth.* Dames Violet with hairy Pods, and a ſmall rediſh Flower.

14. Cheiranthus *ſiliquarum apicibus tridentatis. Hort. Cliff.* 335. *Cheiranthus* with Pods indented in three Parts at the Point. This is the *Heſperis maritima latifolia ſiliquâ tricuſpide. Tourn. Inſt. R. H.* 223. Broad leaved maritime Dames Violet with a three pointed Pod.

15. Cheiranthus *foliis lanceolatis, ſeſſilibus, ſubdentatis, ſpicis florum longiſſimis, ſiliquis angulatis, caule ſuffruticoſo. Cheiranthus* with Spear-ſhaped Leaves ſitting cloſe to the Stalks, very long Spikes of Flowers, angular Pods, and a ſhrubby Stalk. This is the *Leucojum Orientale luteum, foliis dentatis, ſiliquis planis.* Eaſtern yellow Wall-flower with indented Leaves and plain Pods.

The 1ſt Sort grows naturally in the South of *France*, *Spain*, and *Italy*; this is annual, and riſes a Foot high, with an angular channeled Stalk, which branches upward on every Side; theſe are garniſhed with long, narrow, green Leaves, reſembling thoſe of the common Wall-flower, but are ſharply indented on their Edges, ſitting cloſe to the Stalks; at the Extremity of the Branches the Flowers are produced in looſe Spikes; theſe are yellow, having four Petals ſituated in form of a Croſs, greatly reſembling thoſe of the common yellow Wall-flower, but have no Scent; theſe are ſucceeded by long four cornered Pods filled with brown Seeds. It flowers in *June*, and the Seeds are ripe in Autumn.

The 2d Sort grows naturally in *Hungary* and *Iſtria*; this is alſo annual, riſing with an upright Stalk, nearly the ſame Height as the other, but doth not branch out as that. The Leaves are broader, ſmoother, and not pointed as thoſe of the other; they ſtand alternately on the Stalk without any viſible Foot Stalk, and are of a deep green. The Flowers come out in looſe Spikes at the Top of the Stalks; theſe are ſmall, of a pale yellow without Scent, and are ſucceeded by four cornered Pods like thoſe of the former. It flowers, and the Seeds are ripe at the ſame Time with the former.

Theſe two Plants have by ſome Perſons been ſuppoſed the ſame, but I have cultivated them thirty Years, and have never found them alter. If their Seeds are permitted to ſcatter, the Plants will come up without Care, and will thrive on any Soil or Situation, and upon Walls, or in Rubbiſh, as the common Wall-flower.

The 2d Sort grows naturally upon old Walls and Buildings, but is cultivated in Gardens for the Fragrancy of its Flowers. When theſe Plants grow on Walls, or Buildings, they ſeldom riſe more than ſix or eight Inches high, having very tough Roots, and firm Stalks; the Leaves are ſhort, and ſharp pointed, and the Flowers ſmall, but in Gardens the Plants will grow two Feet high, and branch out wide on every Side; the Leaves are broader, and the Flowers much larger, but, in ſevere Winters, theſe Plants are frequently killed in Gardens, when thoſe on Walls receive no Injury, tho' much more expoſed to Winds and Froſts; for as theſe Plants are ſtunted, and of a firmer Texture, having but little Juice, ſo the Cold never affects them.

There is a Variety of this with very double Flowers, which is propagated in the Gardens from Slips, planted in Spring, which readily take Root. There is one Sort of this with variegated Leaves, which is preſerved in Gardens, but is not quite ſo hardy as the plain.

The large, yellow, and bloody Wall-flower, are alſo ſuppoſed to be Varieties of this, which have been improved by Culture; and this I am inclinable to believe, having frequently obſerved many of them degenerate to the common Sort; but although I have many Years ſowed the Seeds of the common Sort from the Walls, yet I could never find them alter, except in being larger, but not any of them approached toward the other Varieties. The large bloody Wall-flower frequently riſes with double Flowers from Seeds, if they are carefully ſaved from ſuch Plants as have five Petals; theſe double Flowers may be propagated by Slips, as the common Sort, but the Plants ſo raiſed will not produce ſo large Spikes of Flowers as thoſe which are propagated by Seeds.

There is alſo another Variety with double Blood coloured Flowers, whoſe Petals are ſhorter and more numerous, approaching nearer to the common double Wall-flower, but much larger. This is called the Old Bloody Wall-flower. It is propagated from Slips, as the other double Sorts. There are ſome intermediate Varieties of theſe Flowers, differing in the Size and Colour of their Petals, which the Floriſts diſtinguiſh as different, but they conſtantly vary from Seeds.

The 4th Sort grows naturally on the *Alps*, and the Mountains in *Italy* where it rarely riſes above ſix Inches high; the Leaves are very narrow, and the Flowers grow in cloſe Spikes at the End of the Branches; they are of a pale yellow, or Brimſtone Colour, and the Necks of the Petals are much longer than the Empalement; theſe have but little Scent. When cultivated in Gardens, it grows as large as the common Wall Flower, and makes a finer Appearance, for the Spikes of Flowers are longer, and grow much cloſer together; but having little Scent, occaſioned their being neglected, and at preſent there are few, if any, of them remaining in the *Engliſh* Gardens. It was titled the Straw coloured Wall Flower by the Gardeners.

The Sorts with ſingle Flowers produce Seeds in Plenty, from which the Plants are raiſed, but the largeſt, and deepeſt coloured Flowers ſhould always be ſelected for Seeds, becauſe from Seeds carefully ſaved, there will be fewer of the Plants degenerate. The Seeds ſhould be ſown in *April*, upon poor, or undunged Soil, and when the Plants are fit to remove, they ſhould be tranſplanted into Nurſery Beds, at about ſix Inches diſtance each Way, obſerving to water and ſhade them until they have taken freſh Root; after which they will require no farther Care, but to keep them clean from Weeds all the Summer, and at *Michaelmas* they may be tranſplanted into the Borders of the Flower Garden, where they are deſigned to remain, that the Plants may get good Roots before the Froſt comes on. This is the Method commonly practiſed with theſe Flowers; but if the Seeds are ſown on poor Land, where they are deſigned to remain, and not tranſplanted, they will thrive, and endure the Froſt in Winter, much better than thoſe which are removed; and if ſown on Ruins or Rubbiſh, they will thrive and continue much longer than in good Land; and in ſuch Places, if properly diſpoſed, they will be very ornamental, and their Flowers having a ſtrong Odour, will perfume the Air to a conſiderable Diſtance.

The Stock Gilliflowers are diſtinguiſhed from the Wallflowers by their hoary Leaves. Theſe agree with each other in their botanical Characters, ſo are generally included in the ſame Genus; but the Gardeners remove them to a conſiderable Diſtance, and treat them very differently; yet there is ſo great Affinity between them, that they may be treated in the ſame Manner, and both will grow equally on old Walls or Ruins.

The 5th Sort is now generally known by the Appellation of ten Weeks Stock; it was formerly titled Annual Stock Gilliflower, which of late has been applied to another Species, which is biennial. This riſes with a round ſmooth Stalk, about a Foot high, dividing into ſeveral Branches upward; theſe are garniſhed with Spear-ſhaped hoary Leaves, rounded at their Ends, and placed without Order, ſometimes being almoſt oppoſite, at others alternate, and frequently three or four together, of unequal Sizes; at the Ends of the Branches the Flowers are produced in looſe Spikes, placed alternate; the Empalement is large, erect, and ſlightly cut into ſeveral acute Parts at the Top; the Petals are large and Heart-ſhaped, ſpreading open in Form of a Croſs; the Pods are long, cylindrical, and have a longitudinal Furrow on one Side, which opens in two Cells, filled with flat roundiſh Seeds, having a thin Border. It flowers in *July* and *Auguſt*, and the Seeds ripen in *October*.

Of this Sort there are the red, the purple, the white, and ſtriped, with ſingle Flowers, and the ſame Colours with double Flowers; theſe are very great Ornaments in the Borders of the Flower Garden, in Autumn, when there is a Scarcity of other Flowers; if the Seeds are ſown at two or three different Times, the Flowers may be continued in Succeſſion near three Months.

The firſt Sowing ſhould be about the Middle of *February*, on a very ſlender hot Bed, juſt to bring up the Plants, which muſt be guarded againſt Froſt, and when fit to remove, they ſhould be tranſplanted into Nurſery Beds, at about 3 or 4 Inches diſtance, obſerving to water and ſhade them till they have taken Root, and keep them clean from Weeds; in theſe Beds they may remain ſix or ſeven Weeks to get Strength, and may then be planted into the Borders of the Flower Garden, where they are to remain: If theſe are tranſplanted when there is Rain, they will ſoon take Root, after which they require no farther Care. From theſe early Plants good Seeds may be expected, therefore ſome of the fineſt of each Colour ſhould be marked for Seeds, which, when ripe, ſhould be carefully cut before the Froſt pinches it, and the Stalks tied up in ſmall Bundles, and hung up in a dry Room, till the Pods are well dried, when the Seeds may be rubbed out, and preſerved for Uſe.

The 6th Sort is biennial, though when the Seeds are ſown early in Spring, the Plants often flower the following Autumn; but theſe Plants which are ſo forward, are often killed in Winter; therefore it is much better to ſow them in *May*, that the Plants may not grow too rank the firſt Seaſon, ſo will live through the Winter, and produce large Spikes of Flowers the ſecond Year.

This is commonly called the Queen's Stock Gilliflower, by the Gardeners, and differs greatly from the other Sorts, though many of the late Botaniſts have ſuppoſed they were only ſeminal Variations, but from near forty Years Experience in the Culture of theſe Plants; I can affirm, that the Species here enumerated, do not alter from one to the other, though they frequently vary in the Colour of their Flowers.

It riſes with a ſtrong Stalk, which is almoſt ſhrubby, a Foot high or more, having oblong, Spear-ſhaped, hoary Leaves, which are frequently waved on their Edges, and turn downward at their Extremity; from the Stalk is ſent out many lateral Branches, garniſhed with the ſame ſhaped Leaves, but ſmaller; theſe Side Branches are each terminated by a looſe Spike of Flowers, each having an oblong woolly Empalement, and conſiſt of four large roundiſh Petals, indented at the End. Theſe uſually appear in *May* and *June*, but the ſame Plants frequently continue flowering moſt Part of Summer. The Seeds ripen in Autumn, and the Plants generally periſh ſoon after; but when any of them grow in dry Rubbiſh, they will laſt two or three Years, and become ſhrubby; thoſe with ſingle Flowers are not worth preſerving after they have perfected their Seeds.

The Flowers of this Sort vary in their Colour, ſome are of a pale red, others of a bright red, and ſome curiouſly variegated, but thoſe of the bright red are generally moſt eſteemed. There are always a great Number of double Flowers produced, if the Seeds are well choſen, frequently three in four of the Plants will be double; and as they divide into many Branches, make a fine Appearance during their Continuance in flower.

The 7th Sort is known by the Title of *Brompton* Stock Gilliflower, I ſuppoſe from its having been there firſt cultivated in *England*. This riſes with an upright, ſtrong, undivided Stalk, to the Height of two Feet or more, garniſhed with long hoary Leaves, reflexed, and waved on their Edges, and at the Top form a large Head; out of the Center of theſe ariſes the flower Stalk, which, when the Plants are ſtrong, is frequently a Foot and a Half long, putting out two or three ſhort Branches toward the Bottom; the Flowers of this Kind have longer Petals than any of the other Sorts, and are formed into a pyramidal Spike, but thoſe with ſingle Flowers are looſely diſpoſed, becauſe the Flowers having but few Petals, do not fill the Spike, as thoſe do which are double; for theſe often have ſo many Petals, as to render each Flower as large and full as ſmall Roſes; and when they are of a bright red, make a noble Appearance, being excelled by none of the flowery Tribe; but the Plants of this Sort produce but one Spike, in which it differs from all the other Kinds, and being conſtant in this Particular, I think is ſufficient to eſtabliſh a diſtinct Species. This Sort is generally biennial, though many Times the Plants are preſerved longer, but they are always ſtronger the firſt Year of their flowering, than they will be after; ſo that the Seeds are ſown every Spring, to continue a Succeſſion of flowering Plants.

The 8th Sort is the White Stock Gilliflower, which is of longer Duration than either of the other Sorts; I have frequently had theſe Plants live three or four Years, which have become ſhrubby; their Stalks have been three

Feet high, and branched out on every Side, ſo as to appear like Shrubs; theſe ſeldom ſend out Flower Stalks from the Center of the Plant, but it is the Side Branches which produce the Flowers, and theſe Side Branches divide into ſeveral other, which is not common to the other Sorts. There are always many double Flowers riſe from Seeds of this Sort, when they are well choſen; ſome Years I have ſcarce had enough to preſerve the Kind. The Varieties of this are few, ſometimes a few of the Plants will produce pale Fleſh coloured Flowers, and now and then ſome have been purple; and as that Sort of Stock Gilliflower, which is titled the *Twickenham* Purple, will ſometimes come with Flowers variegated with white, ſo I have been inclinable to think theſe two may be Varieties from each other; and the rather, becauſe the Plants agree in their external Habit, for neither of theſe put out Flower Stems from the Center of the Plants, but always on their Side, ſo that theſe are undoubtedly a diſtinct Species from the former.

The 9th Sort is known by the Title of White Wall Flower, among Gardeners and Floriſts. This riſes with a greeniſh Stalk a Foot high, dividing into many Branches, garniſhed with narrow, ſmooth, Spear-ſhaped Leaves, of a lucid green, and of thicker Conſiſtence than thoſe of any of the other Sorts, and come out without any Order; they are near three Inches long, and about half an Inch broad in the Middle; the Flowers are produced in looſe Spikes, at the End of the Branches, which are of a pure white, and have a great Fragrancy, eſpecially in an Evening, or in cloudy Weather; the Flowers are ſucceeded by oblong compreſſed Pods, like thoſe of the other Species. There is a Variety of this with double Flowers, which is propagated by Cuttings or Slips, in the ſame Manner as the double Wall-flowers; but theſe Plants require Protection from great Rains, and Froſt in Winter; ſo if they are planted in Pots, and placed under a common Frame in Winter, where in mild Weather they may enjoy the free open Air, and covered from hard Rains and Froſt, they may be preſerved ſeveral Years.

Sometimes many double Flowers will come up from Seeds, but not ſo frequent as ſome of the other Sorts. I have raiſed more than one hundred Plants in a Seaſon, without obtaining one double Flower, and from the Seeds of theſe, have the following Year had more than half the Plants with double Flowers: But this is not to be expected often.

The Seeds of the 10th Sort were ſent me by Dr. *Linnæus*, from *Upſal* in *Sweden*. This Plant riſes about ſix Inches high, with an herbaceous ſwelling Stalk; the Leaves are produced in Cluſters at the Top, which are very hoary, waved on their Edges, have obtuſe Points, and ſit very cloſe to the Stalk; the Flowers are produced in ſlender Spikes, from the Side of the Stalk; theſe are purple, but not ſo fragrant as the other Sorts; the Pods are woolly, and recurve backward at the End.

All theſe Sorts flower in *May* and *June*, at which Time they are the greateſt Ornament to the Flower Garden, therefore deſerve our Care to cultivate them as much as any of the flowery Tribe; but in order to have many double Flowers, there muſt be great Care taken in the Choice of Plants for Seeds, without which there can be little Hopes of having theſe Flowers in Perfection. The only ſure Way of getting many double Flowers, is to make Choice of thoſe ſingle Flowers which grow near many double ones; for I have always found thoſe Seeds which have been ſaved from Plants growing in Beds cloſe to each other, where there happened to be many double Flowers among them, have produced a much greater Number of Plants with double Flowers, than thoſe which have been ſaved from Plants of the ſame Kinds, which grew ſingle in the Borders of the Flower Garden; ſo that there ſhould be a ſmall Bed of each Kind planted on Purpoſe to ſave Seeds in the Flower Nurſery; or if they are ſown there, and the Plants thinned properly when young, they need not be tranſplanted, for I have always obſerved the Plants which have come up from ſcattered Seeds, and have not been tranſplanted, endure the Froſt much better than thoſe which have been removed; for as theſe Plants ſend out horizontal Roots from the Bottom of their Stems, which ſpread near the Surface of the Ground, ſo when they are tranſplanted, the Roots are forced downward, out of their natural Direction; and if their Stalks were grown tall before removal, they are generally planted low in the Ground, whereby they are apt to rot, if the Ground is moiſt, or the Winter ſhould prove wet; therefore where they can be left unremoved, there will be a better Chance of their living through the Winter; and as theſe Beds need not be of great Extent, ſo when the Winter proves very ſevere, it will not be much Trouble or Expence to arch the Beds over with Hoops, and cover them with Mats in froſty Weather, by which Method they may be always preſerved.

The Ground where theſe Seeds are ſown, muſt not have any Dung, for in rich Land the Plants will grow very vigorous in Summer, but the heavy Rains in Autumn, or Froſt, will ſoon deſtroy them; theſe Plants will thrive on Rocks, or old Walls, as was before obſerved; and in ſuch Situations they will live, when all thoſe planted in Gardens are deſtroyed. The beſt Time to ſow the Seeds is about the Beginning of *May*; and if the Seaſon ſhould prove dry, it will be proper to ſhade the Beds with Mats every Day, to prevent the Earth from drying too faſt, but the Covering muſt be taken off every Evening, to admit the Dews of Night, and they ſhould be gently watered in the Evening two or three times a Week. When the Plants firſt appear, with their two Seed Leaves, they are often attacked by Flies, eſpecially in dry hot Seaſons; therefore to prevent their deſtroying the Plants, the Covering ſhould be continued over them during the Heat of the Day, and the Plants frequently refreſhed with Water, which will keep them in a growing State, ſo the Flies will not infeſt them; for I have always obſerved, they never attack any Plants unleſs they have been ſtunted in their Growth; when the Plants have got Strength, they will be ſecure from this Danger, ſo the Coverings may be removed; after this the Plants will require no farther Care but to keep them clean from Weeds, and thinned to the Diſtance of 9 Inches, or a Foot aſunder, that they may have proper Room to grow, and not draw each other up tall and weak. The Plants which are drawn out of theſe Beds to thin them, may be planted in the Borders of the Flower Garden, where they are deſigned to remain, and the ſooner they are removed, when the Plants have got 6 or 8 Leaves, the more likely they will be to live through the Winter, becauſe their Roots will not have extended far, ſo cannot be planted deep in the Ground, and may take their natural Direction; therefore whenever theſe Plants are removed, it is always the beſt Way to do it when they are young.

The farther Care of the Plants which are left in the Beds, will be to cover them in Winter, with Mats, and when they come to flower, all thoſe which are not of good Colours, or whoſe Flowers are ſmall, ſhould be drawn out ſo ſoon as they appear, that they may not impregnate thoſe deſigned for Seeds with their Farina; but thoſe with double Flowers ſhould by no Means be removed, nor ſhould their Flowers be cut off, but ſuffered to fade among the ſingle ones, by which the Seeds will be improved; it will alſo be a ſure Method of preſerving each Sort in Perfection, to have them ſeparate from each other, in diſtinct Beds; though I think there is no Danger of any of the Species altering, by the Mixture of their Farina; but their Colours are liable to be changed by it; ſo that in order to continue thoſe pure, they ſhould not ſtand too near each other.

The Time for ſowing the Seeds before mentioned muſt be underſtood to be for the biennial Sorts; for the annual, or ten Weeks Stock Gilliflower, ſhould be for the firſt Seaſon, ſown in *February*, as before directed; and to ſucceed theſe, there ſhould be another Parcel ſown in *March*; and thoſe who are curious to continue theſe Flowers late in Autumn, ſhould ſow ſome Seed the latter End of *May*; if theſe laſt ſown are on a warm Border, where they may be covered, by placing Glaſſes before them in Winter, or with Mats, they may be continued in flower till *Chriſtmas*; and if ſome of the Plants are potted, and put under a hot Bed Frame in Autumn, where they may enjoy the open Air in mild Weather, and be ſcreened from hard Rains and Froſt; by this Method I have known them flower all the Winter, when it has not been very ſevere.

There are ſome who propagate the double Stock Gilliflowers by Slips and Cuttings, which will take Root when properly managed; but the Plants ſo raiſed are never ſo ſtrong as thoſe which come from Seeds, and their Spikes of Flowers are always very ſhort, ſo have not half the Beauty; therefore it is not worth while to practiſe this Method, unleſs for thoſe Sorts which cannot be obtained with any Certainty from Seed.

The 11th Sort grows naturally in the South of *France*, *Spain*, and *Italy*, near the Sea Coaſt. This riſes near a Foot high, with a ligneous Stalk, dividing into many ſmall Branches, garniſhed with narrow hoary Leaves, entire, and rounded at their Extremity; the Flowers are produced in looſe Spikes at the End of the Branches, which are ſmaller than thoſe of either Sort before mentioned, of a bright red at their firſt appearing, but fade to a purple before they fall off. The Stalks, Leaves, and the whole Plant is very white, and by its woody Stalks hath the Appearance of a perennial Plant, but it conſtantly periſhes in Autumn. The Seeds of this Sort ſhould be ſown in Autumn, on a warm Border where the Plants are deſigned to remain; when they come up, they will require no farther Care but to keep them clean from Weeds, and thin them where too cloſe. Theſe autumnal Plants will flower early in *June*, ſo will produce good Seeds; but thoſe ſown in Spring will flower in *July* and *Auguſt*, ſo that from theſe there cannot be any Certainty of having ripe Seeds; however by ſowing the Seeds at two or three different Seaſons, there may be a Succeſſion of Flowers continued for three or four Months.

The 12th Sort is commonly ſown in Gardens, as an Edging for Borders, but more generally in Patches between taller growing Flowers: It is titled ſometimes Dwarf annual Stock Gilliflower, and by others it hath the Appellation of *Virginia* Stock Gillyflower. This ſeldom riſes more than ſix Inches high; ſending out many Branches from the Root, which intermix and grow irregular; theſe are garniſhed with Spear-ſhaped Leaves rounded at their Ends, and ſit cloſe to the Branches at their Baſe; the Flowers come out in looſe Spikes at the End of the Branches, which are of a purple Colour, compoſed of four Petals in Form of a Croſs, and are ſucceeded by ſlender Pods, like thoſe of the other Sorts. If the Seeds of this Sort are ſown in Patches, at two or three different Times, the firſt in Autumn, the ſecond the latter End of *March*, and the third the End of *April*, or the Beginning of *May*, in the Borders of the Flower Garden, they will make a Variety, when intermixed with other low growing annual Flowers for three Months.

The 13th Sort riſes near two Feet high, ſending out many upright Branches from the Bottom, thinly garniſhed with Spear-ſhaped Leaves, the lower ones being a little indented; the Flowers come out ſingle, at great Diſtances from each other, toward the upper Part of the Branches; theſe are ſmall, of a purpliſh red Colour, and ſoon fall away, being ſucceeded by long taper Pods, with Awl-ſhaped Points. This is an annual Plant, which may be treated as the laſt mentioned Sort; but it having little Beauty, is not often cultivated.

The 14th Sort grows naturally on the Sea Coaſts in *Italy*, *Spain* and *Portugal*. This is alſo an annual Plant, which branches out from the Root, into many declining Stalks; the lower Leaves are about two Inches long, and three Quarters of an Inch broad, very deeply ſinuated on their Edges, and hoary, thoſe on the Stalks are of the ſame Form, but much ſmaller; the Flowers are produced from the Side of the Stalks ſingly, and at the Top in looſe Spikes; the Empalements of the Flowers are covered with a white Down, as are alſo the Ends of the Branches; the Flowers are purple, compoſed of four Leaves placed in Form of a Croſs; the Pods are about three Inches long, taper, woolly, and at their Ends are divided into three Parts, which ſpread into a Triangle. It flowers in *July*, and when the Seaſon is favourable, the Seeds will ripen in Autumn, but if ſown in Autumn, on a warm Border, the Plants will live through the Winter, and will flower early in *June*, ſo from theſe good Seeds may be obtained.

The 15th Sort was diſcovered by Dr. *Tournefort*, in the *Levant*, who ſent the Seeds to the Royal Garden at *Paris*, which ſucceeded, and ſince has been communicated to moſt of the curious Gardens in *Europe*. This riſes with a ſhrubby Stalk, more than two Feet high, which divides into many Branches upward; theſe are thinly garniſhed with Spear-ſhaped Leaves, ſitting cloſe to the Branches, of a dark green Colour, and a little indented; the Flowers grow in long Spikes from the End of the Branches, which are ſmall, of a pale yellow, without Scent, ſo is only preſerved in Botanick Gardens for Variety. This Plant is biennial, ſo may be treated as the Stock Gilliflower, or Wall-flower.

CHELIDONIUM. *Tourn. Inſt. R. H.* 231. *Tab.* 116. *Lin. Gen. Plant.* 572. *Chelidonium majus. Raii. Meth. Plant.* 100. *Glaucium. Tourn. Inſt.* Celandine or greater Celandine, in *French Chelidoine* or *Eclair.*

The *Characters* are,

The Flower hath a roundiſh Empalement, compoſed of 2 *concave obtuſe Leaves which fall off*; *it hath* 4 *large roundiſh Petals, which ſpread open and are narrow at their Baſe*; *in the Center is ſituated a cylindrical Germen, attended by a great Number of Stamina, which are broad at Top, and terminated by oblong, compreſſed, twin Summits. Upon the Germen is ſituated a bifid Stigma in Form of a Head. The Germen becomes a cylindrical Pod, with one or two Cells, opening with two Valves, and filled with many ſmall Seeds.*

The *Species* are,

1. Chelidonium *pedunculis umbellatis. Lin. Gen. Plant.* 505. Celandine with an umbellated Foot Stalk. This is the *Chelidonium majus vulgare. C. B. P.* 144. Greater common Celandine.

2. Chelidonium *foliis quinque lobatis, lobis anguſtis acutè laciniatis.* Celandine whoſe Leaves are compoſed of five narrow Lobes, which are cut into many acute Segments. This is the *Chelidonium majus laciniato flore Cluſ. Hiſt.* 203. Greater Celandine with a jagged Flower.

3. Chelidonium *pedunculis unifloris, foliis amplexicaulibus ſinuatis, caule glabro. Lin. Sp. Plant.* 506. Celandine with ſingle Flowers on the Foot Stalks, ſinuated Leaves which embrace the Stalks, and a ſmooth Stalk. This the *Glaucium flore luteo. Tourn. Inſt. R. H.* 351. *Glaucium* with a yellow Flower; and the *Papaver corniculatum luteum. C. B. P.* 171. Yellow horned Poppy.

4. Chelidonium *pedunculis unifloris, foliis ſeſſilibus pinnatifidis, caule hiſpido. Lin. Sp. Plant.* 506. Celandine with ſingle Flowers upon the Foot Stalks, Leaves ſet cloſe to the Stalks which have winged Points, and a rough Stalk. This is the *Glaucium hirſutum flore Phœnicio. Tourn. Inſt. R. H.* 253. Hairy *Glaucium*, or horned Poppy, with a ſcarlet Flower.

5. Chelidonium *pedunculis unifloris, foliis ſemiamplexicalibus, dentatis, glabris.* Celandine with Foot Stalks having a ſingle Flower, and ſmooth, indented Leaves, which half embrace the Stalks. This is the *Glaucium glabrum flore Phœnicio. Tourn. Inſt.* 254. Smooth horned Poppy with a ſcarlet Flower.

6. Chelidonium *pedunculis unifloris, foliis pinnatifidis, linearibus, caule lævi. Lin. Sp. Plant.* 506. Celandine with ſingle Flowers upon the Foot Stalk, many pointed, narrow Leaves, and a ſmooth Stalk. This is the *Glaucium flore violaceo. Tourn. Inſt.* 254. Horned Poppy with a Violet coloured Flower.

The 1ſt Sort is the common Celandine uſed in Medicine, and is eſteemed aperitive and cleanſing, opening Obſtructions of the Spleen and Liver, and is of great Uſe in curing the Jaundice and Scurvey. This grows naturally on the Side of Banks, and in ſhady Lanes in many Parts of *England*, ſo is ſeldom cultivated in Gardens; for if the Seeds are permitted to ſcatter, the Ground will be plentifully ſtored with Plants to a conſiderable Diſtance. It flowers in *May*, at which Time the Herb is in the greateſt Perfection for Uſe.

The 2d Sort is found growing in a few particular Places, where the Seeds have been formerly ſown, or the Plants caſt out of Gardens. This is by ſome ſuppoſed to be only a Variety of the 1ſt, but I have propagated this by Seeds above thirty Years, and have conſtantly found the Plants the ſame, and never vary from the 1ſt, nor have I ever obſerved the firſt alter to this. The Leaves of this are divided into narrow long Diviſions, which are deeply jaged on their Edges in acute Segments, and the Petals of the Flower are cut into many Parts, in which it differs from the firſt. If the Seeds of this Sort are permitted to ſcatter, they will fill the Ground with Plants. They both delight in Shade.

The 3d Sort is known by the Title of Horned Poppy; it was ſo called from the Reſemblance which the Flower bears to the Poppy, and the long Seed Veſſel which is like a Horn. It grows naturally upon the ſandy and gravelly Shores by the Sea, in many Parts of *England*, from whence the Seeds have been brought into Gardens, where it is ſometimes allowed a Place for Variety. This Plant abounds with a yellow Juice which flows out from every Part when broken. It ſends out many thick gray Leaves, deeply jaged; the Stalks are ſtrong, ſmooth, and jointed, which riſe near two Feet high, and divide into many Branches. Theſe are garniſhed with Leaves at each Joint; thoſe on the lower Part of the Stalks are long, broad, and deeply jaged, but the upper Leaves are entire and almoſt Heart-ſhaped: They cloſely embrace the Stalks with their Baſe, from the Boſom of the Leaves come out the ſhort Foot Stalks of the Flowers, each ſupporting one large yellow Flower, compoſed of four broad Petals, which ſpread open, like the Garden Poppy, in the Center of which are a great Number of yellow Stamina, ſurrounding a long cylindrical Germen, crowned by an Arrow-pointed Stigma, which is permanent, remaining upon the Top of the horned Seed Veſſel, which grows nine or ten Inches long, having a longitudinal Furrow on one Side, where it opens when ripe, and lets out the Seeds. This is a biennial Plant, which flowers the ſecond Year, and periſhes ſoon after the Seeds are ripe.

If the Seeds are permitted to ſcatter, they will fill the Ground near them with Plants, ſo that it is not proper for a Flower Garden; but if a few of the Seeds are ſcattered about in Rock Work, the Plants will riſe without Trouble, and in ſuch Places will have a pretty Effect; they will ſow themſelves, ſo the only Care they require, is to pull them up when they multiply too faſt. It flowers in *June* and *July*, and the Seeds ripen in Autumn.

The 4th Sort grows naturally in *Spain*, *Italy*, and ſome Parts of *Germany*, from whence the Seeds have been brought to *England*. The Leaves are deeply jaged and hairy, of a pale green, and grow cloſe to the Stalks: Thoſe at the Bottom lie on the Ground, and are broader than thoſe above. The Stalks are a Foot and a Half high, having a ſingle jaged Leaf placed at each Joint; theſe have many Diviſions, from their Origin to the Point, which is extended longer than the lower Leaves. The Flowers come out from the Boſom of the Leaves; theſe are compoſed of five broad obtuſe Petals, which are of a dark ſcarlet Colour, and ſoon fall off. In the Center of each is ſituated an oblong Germen, having no Style, but ſupports a bifid Stigma; this is attended by a great Number of ſhort Stamina, terminated by obtuſe Summits. The Germen becomes a long taper Pod, on the Apex of which the bifid Stigma remains, ſitting on the middle Partition, which divides the Pod into two

Cells, which are filled with ſmall Seeds. The Flower hath an Empalement compoſed of two hollow Leaves, which are cloſely ſet with ſhort Prickles; this falls away, when the Flower is expanded. It flowers in *June* and *July*, and the Seeds ripen in Autumn. As the Flowers of this Plant are but of ſhort Duration, they do not make any conſiderable Figure; but the Foliage of the Plant is very elegant, and might be introduced by Way of Ornament to Furniture with great Advantage, being very picturesque; it may alſo be wrought into Patterns for Silks, and painted upon Porcelane, where it would have a very good Effect. If the Seeds are ſown in Autumn, they will more certainly grow, than thoſe which are ſown in Spring; which frequently in dry Seaſons do not come up the ſame Year, or at leaſt not before Autumn; whereas thoſe ſown in Autumn, frequently come up ſoon after, or if not at that Seaſon, do not fail coming up in Spring; and theſe Plants come early to flower, ſo that good Seeds may always be obtained from them. They ſhould be ſown where the Plants are to remain, and require no other Care but to thin them where too cloſe, and keep them clean from Weeds.

The 5th Sort differs from the 4th, in having broader Leaves, which are not ſo deeply divided; the whole Plant is ſmooth, and the Flowers larger, but of the ſame Colour: This is annual, and is treated as the laſt.

The ſixth Sort grows naturally among the Corn, in ſome Parts of *England*. This is alſo annual, and the Seeds are ſown in Autumn, for thoſe ſown in the Spring ſeldom ſucceed. The Leaves of this Sort are finely jaged, and divided into narrow Segments, ſomewhat like Buckſhorn Plantain; they are ſmooth, of a lucid green, and commonly oppoſite. The Stalks riſe little more than a Foot high, dividing into two or three Branches upward, garniſhed with ſmall Leaves of the ſame Form as theſe below. The Flowers are ſuſtained by ſlender Foot Stalks, which come out from the Wings of the Leaves; theſe are compoſed of four obtuſe Petals, of a violet Colour, in the Center of which is ſituated a cylindrical Germen, attended by a great Number of Stamina; the Germen becomes a long cylindrical Pod, like thoſe of the other Species. The Flowers of this Plant are very fugacious, ſeldom laſting above three or four Hours before the Petals drop off, eſpecially in clear Weather. It flowers in *May*, the Seeds ripen in *July*, and the Plants ſoon after periſh. If the Seeds are permitted to ſcatter, the Plants will come up without Care as the others.

CHELONE R. S. *Tourn.* 1706. *Lin. Gen. Plant.* 666.

The *Characters* are,

The Empalement of the Flower is of one Leaf, cut into five Parts, and is permanent; the Flower is of the ringent Kind, having a ſhort cylindrical Tube, which is ſwollen at the Chaps, where it is oblong, convex above, and plain below; the Mouth is almoſt cloſed, the upper Lip is obtuſe and indented, the lower Lip is lightly cut in three Parts. It hath four Stamina, which are incloſed in the Backſide of the Petal, the two Side ones being a little longer than the other, which are terminated by hairy oval Summits. It hath an oval Germen ſupporting a ſlender Style, crowned by an obtuſe Stigma; the Germen afterward becomes an oval Capſule having two Cells, which are filled with flat roundiſh Seeds having a Border.

The *Species* are,

1. Chelone *foliis lanceolatis, acuminatis, ſeſſilibus, obſoletè ſerratis, radice reptatrice. Chelone* with pointed, Spear-ſhaped Leaves, ſet cloſe to the Stalks, with ſmall Serratures on their Edges, and a creeping Root. This is the *Chelone Acadienſis flore albo. Tourn. Act. R. Par.* 1706. *Chelone* of *Acadia*, with a white Flower.

2. Chelone *foliis lanceolatis, obliquis, petiolatis, oppoſitis, marginibus acutè ſerratis. Chelone* with oblique, Spear-ſhaped Leaves, growing oppoſite on Foot Stalks, and their Borders ſharply ſawed. This the *Chelone floribus ſpecioſis pulcherrimis, colore roſæ Damaſcenæ. Clayt. Flor. Virg.* 71. *Chelone* with a very beautiful Flower, the Colour of the Damaſk Roſe.

3. Chelone *caule foliiſque hirſutis. Lin. Sp. Plant.* 611. *Chelone* with hairy Stalks and Leaves. This is the *Digitatis Virginiana, panacis coloni foliis, flore amplo, pallaſcente. Pluk. Mant.* 64. *Virginia* Foxglove, with Clowns Allheal Leaves, and a large pale Flower.

The firſt Sort grows naturally in moſt Parts of *North America*. This is called by *Joſcelin*, in his *New England Rarities*, the *Humming Bird Tree*. It hath a thick jointed Root, which creeps under Ground to a conſiderable Diſtance, ſending up ſmooth channeled Stalks, which riſe about two Feet high, garniſhed with two Leaves at each Joint, ſtanding oppoſite without Foot Stalks; theſe are three Inches and a Half long, and about three Quarters of an Inch broad at their Baſe, where they are broadeſt, and diminiſh gradually to a ſharp Point; they have ſmall Serratures on their Edges, which ſcarcely appear. The Flowers grow on a cloſe Spike at the End of the Stalks, they are white, and have but one Petal, which is tubular, and narrow at the Bottom, but ſwells upward, almoſt like the Foxglove Flower; the upper Side is bent over and convex, but the under is flat, and ſlightly indented in three Parts at the End. When the Flowers fall off, the Germen turns to an oval Capſule ſitting in the Empalement, and is filled with roundiſh compreſſed Seeds, which have a thin Border. It flowers in *Auguſt*, and when the Autumn proves favourable, the Seeds will ripen in *England*; but as the Plants propagate ſo faſt by their creeping Roots, the Seeds are ſeldom regarded. The beſt Time to tranſplant the Roots is in Autumn, that they may be well-eſtabliſhed before the Spring, otherwiſe they will not flower ſo ſtrong, eſpecially if the Seaſon proves dry; but if they are removed in Spring, it ſhould not be later than the Middle of *March*, by which Time their Roots will begin to puſh out new Fibres. They will thrive in almoſt any Soil or Situation, but their Roots are apt to grow too far, if not confined, ſo intermix with thoſe of other Plants; and then their Stalks ſtand ſo far diſtant from each other, as to make but little Appearance; therefore they ſhould be planted in Pots, which will confine their Roots, ſo that in each Pot, there will be eight or ten Stalks growing near each other, when they will make a tolerable good Appearance. This Plant is very hardy, ſo is not injured by Cold, but it muſt have Plenty of Water in hot Weather.

The 2d Sort was diſcovered in *Virginia* by Mr. *Clayton*; who ſent it to *England*: The Roots of this do not creep ſo far as thoſe of the firſt, the Stalks are ſtronger, and the Leaves much broader, and oblique; they are deeply ſawed on their Edges, and ſtand upon ſhort Foot Stalks: The Flowers are of a bright purple Colour, ſo make a finer Appearance. This flowers at the ſame Time with the firſt, and is propagated by parting the Roots in the ſame Manner.

The 3d Sort I received from *New England:* This is like the firſt Sort, but the Stalks and Leaves are very hairy, and the Flower is of a purer white. It flowers at the ſame Time, and is treated as the former.

As theſe Plants flower in Autumn, when there is a Scarcity of Flowers, it renders them more valuable, eſpecially the 2d Sort, whoſe Flowers make a pretty Appearance, when they are ſtrong; and if ſome of them have a ſhady Situation, they will flower later in Autumn.

CHENOPODIA-MORUS. *See* Blitum.

CHENOPODIUM [χηνοπόδιον, *Gr.*] *Tourn. Inſt. Lin. Gen. Plant.* 272. Gooſefoot, or Wild Orach.

The *Characters* are,

It hath a permanent Empalement, compoſed of five oval concave Leaves: The Flower hath no Petal, but in the Center it hath five Stamina placed oppoſite to the Leaves of the Empalement, and of the ſame Length, terminated by roundiſh Twin Summits; it hath a round Germen ſupporting a ſhort double Style, crowned by an obtuſe Stigma. The Germen becomes a five cornered Fruit incloſed in the Empalement, containing one roundiſh depreſſed Seed.

The *Species* are,

1. CHENOPODIUM *foliis triangulari-ſagittatis, integerrimis. Hort. Cliff.* 84. Gooſefoot, with Arrow-ſhaped triangular Leaves which are entire, called *Engliſh Mercury, All Good,* or *Good Henry.*

2. CHENOPODIUM *foliis integerrimis rhombeo-ovatis, floribus conglomeratis. Flor. Suec.* 216. Gooſefoot with entire oval rhomboidal Leaves, and Flowers growing in Cluſters. This is the *Chenopodium fœtidum. Tourn. Inſt.* 506. Stinking Orach.

3. CHENOPODIUM *foliis lineari-lanceolatis, planis, integerrimis. Hort. Cliff.* 86. Gooſefoot with narrow Spear-ſhaped Leaves, which are plain and entire. *Chenopodium lini folio villoſo. Tourn. Inſt.* Gooſefoot with a hairy Flax Leaf, called *Belvedere,* or *Summer Cypreſs.*

4. CHENOPODIUM *foliis oblongis, ſinuatis, racemis nudis multifidis. Hort. Cliff.* 84. Gooſefoot with oblong, ſinuated Leaves, and naked multifid Spikes of Flowers. This is the *Chenopodium ambroſioides folio ſinuato. Tourn. Inſt.* 506. Gooſefoot, like Ambroſia, with ſinuated Leaves, commonly called *Oak of Jeruſalem.*

5. CHENOPODIUM *foliis lanceolatis, dentatis, racemis foliatis ſimplicibus. Hort. Cliff.* 84. Gooſefoot with Spear-ſhaped, indented Leaves, and ſingle leafy Spikes of Flowers. This is the *Chenopodium ambroſioides Mexicanum. Tourn. Inſt.* 506. *Mexican* Gooſefoot, like Ambroſia, commonly called *Oak of Cappadocia.*

6. CHENOPODIUM *foliis lanceolatis, dentatis, caule fruticoſo.* Gooſefoot with Spear-ſhaped indented Leaves, and a ſhrubby Stalk. *Chenopodium ambroſioides Mexicanum fruticoſum. Boerh. Ind. alt.* Shrubby *Mexican* Orach.

7. CHENOPODIUM *foliis linearibus, teretibus, carnoſis, caule fruticoſo. Hort. Cliff.* 86. Gooſefoot with narrow, taper, fleſhy Leaves, and a ſhrubby Stalk. This is the *Blitum fruticoſum maritimum, vermicularis fruticoſum dictum. Raii Syn.* 156. Maritime ſhrubby Blite, called Stone Crop Tree, or ſhrubby Glaſſwort.

There are many other Species of this Genus, ſome of which grow naturally on Dunghills, and the Side of Ditches in *England,* where they become troubleſome Weeds; therefore I have not enumerated them here.

The 1ſt Sort is found growing naturally in ſhady Lanes in many Parts of *England;* but it is very doubtful if the Seeds have not been caſt out of Gardens originally, becauſe this Plant was formerly cultivated in Kitchen Gardens for Uſe; and in ſome of the Northern Counties, the People ſtill preſerve it in Gardens as an eſculent Herb; which in the Spring Seaſon, they dreſs in the ſame Manner as Spinach, for which it is a Subſtitute. But as the latter is a much better Herb, it has juſtly obtained the Preference, in all the Countries where the Culture of the Kitchen Garden is underſtood.

The 2d Sort is very common on Dunghills; it is ſeldom cultivated, except in ſome Phyſick Gardens; for the Markets in *London* are ſupplied by the Herb Women, who gather it where it grows wild.

The 3d Sort is ſometimes cultivated in Gardens; it is a beautiful Plant, naturally diſpoſed to grow very cloſe and thick, and in as regular a Pyramid as if cut by Art. The Leaves are of a pleaſant green; and were it not for that, hath ſo much of the Appearance of a Cypreſs Tree, that at ſome Diſtance it might be taken for the ſame, by good Judges: The Seeds ſhould be ſown in Autumn; and in Spring when the Plants come up, they may be planted into Pots of good Earth, and kept ſupplied with Water in dry Weather. Theſe Pots may be intermixed with other Plants to adorn Court Yards, *&c.* where they will appear very handſome, until their Seeds begin to ſwell and grow heavy, which weigh down and diſplace the Branches; then the Pots may be removed to ſome abject Part of the Garden, to perfect their Seeds; which if permitted to fall upon the Ground, will come up the next Spring; ſo you need be at no more Trouble than to tranſplant them where you intend they ſhould grow.

The 5th Sort was formerly uſed in Medicine; but although it ſtill continues in the Catalogue of Simples in the *London Diſpenſatory,* is ſeldom uſed at preſent. This Plant may be propagated by ſowing the Seeds in an open Border of good Earth in Spring, where it will perfect Seeds in Autumn; which, if permitted to ſhed on the Ground, will ariſe as the former.

The 4th Sort was brought from *America,* where the Seeds are called Worm Seed; I ſuppoſe from ſome Quality contained in it, which deſtroys Worms in the Body.

This is raiſed by ſowing the Seed in Spring as the before-mentioned Sorts, and will perfect its Seed in Autumn; after which the Plant decays to the Ground: But if the Root be preſerved in Shelter under a common Frame in Winter, the Stalks will riſe again the following Spring.

The Leaves of this Plant emit a very ſtrong Odour when bruiſed ſomewhat like thoſe of the Ambroſia, for which the Plants are preſerved in Gardens, for the Flower hath no Beauty. This grows naturally in *North America,* where it is generally called Worm Seed. It ſends up ſeveral Stalks from the Root, which riſe about two Feet high, and are garniſhed with oblong Leaves a little indented on the Edges, of a light green, and placed alternately on the Stalks; the Flowers come out from the Wings of the Leaves, on the upper Part of the Branches, in looſe Spikes: Theſe appear in *July,* and the Seeds ripen in *September;* which, if permitted to ſcatter, the Plants will come up in Plenty the following Spring, when a few of them may be tranſplanted into Pots filled with Kitchen Garden Earth, to be preſerved through the Winter; and the others may be planted in the common Borders, where they will flower and perfect their Seeds; but unleſs the Winter is very favourable, the Roots will be deſtroyed.

The Seeds of all the Species of this Genus ſucceed beſt if ſown in Autumn; for when ſown in Spring, they frequently lie a Year before the Plants come up: Therefore where the Seeds ſcatter, the Plants will come up much better than thoſe ſown by Hand.

The 5th Sort is annual: This alſo grows naturally in *North America*, from whence I received the Seeds. It alſo is a Native of many warm Countries in *Europe*. This hath many oblong Leaves at the Bottom, which are deeply ſinuated on both Sides, ſomewhat like thoſe of the Oak Tree, from whence it received the Title of *Oak of Jeruſalem*. Theſe are purple on their under Side, and when bruiſed, emit a ſtrong Odour. The Stalks riſe about 8 or 9 Inches high, dividing into ſeveral ſmaller Branches. The lower Part of theſe is garniſhed with Leaves of the ſame Shape with thoſe below, but ſmaller. The Flowers grow in naked looſe Spikes, divided into many Parts: they are ſmall, herbaceous, and are ſucceeded by ſmall round Seeds. This Sort flowers in *June* and *July*, and the Seeds ripen in Autumn.

The 6th Sort hath Leaves very like thoſe of the 4th, and hath the ſame Scent; but this hath a ſhrubby Stalk, which riſes five or ſix Feet high, and divides into many Branches. It is a Native of *America*, and will not live through the Winter in *England* in the open Air. It is eaſily propagated by Cuttings during any of the Summer Months, which, if planted in a ſhady Border and duly watered, will ſoon take Root; and then may be planted in Pots filled with light Earth, and placed in the Shade till they have taken new Root, after which they may be placed with other hardy exotick Plants in a ſheltered Situation during Summer; and when the Froſts come on, they muſt be removed into the Green-houſe, but they only require Protection from hard Froſts, ſo ſhould have Plenty of Air in mild Weather.

The 7th Sort grows naturally on the Sea Coaſt in *Devonſhire* and *Cornwall*, but is propagated in the Nurſeries for Sale. This ſends out from the Root many ſlender ſhrubby Stalks, which riſe near four Feet high, dividing upward into ſmaller ligneous Branches, which grow erect, and are cloſely garniſhed with ſmall taper ſucculent Leaves, like the leſſer Houſeleek; theſe remain all the Year, for which the Shrub is chiefly valued. The Flowers are ſmall, and have no Beauty. This is propagated by Suckers, which it ſends out from the Roots in Plenty. It may be tranſplanted either in Spring or Autumn, and will thrive almoſt any where.

CHERRY-LAUREL. *See* Padus.

CHERRY-TREE. *See* Ceraſus.

CHERVIL. *See* Chærefolium.

CHESTNUT. *See* Caſtanea.

CHESTNUT, the Horſe. *See* Eſculus.

CHIONANTHUS, *Lin. Gen. Plant.* 21. the Fringe or Snowdrop Tree. This Name was given to it by Dr. *Van Royen*, from the Whiteneſs of its Flowers: The Inhabitants of *America*, where this Tree is a Native, call it the ſame; and the *Dutch* call it *Sneebaum*, i. e. Snow Tree, on the ſame Account.

The *Characters* are,

It hath a permanent Empalement of one Leaf, which is erect, and cut into 4 acute Parts; the Flower is of one Petal, divided into four Parts, having a ſhort ſpreading Tube the Length of the Empalement, and the upper Part is cut into 4 very long narrow Segments, which are erect. It hath two ſhort Stamina, inſerted in the Tube of the Petal, terminated by upright Heart-ſhaped Summits. In the Center is placed the oval Germen, ſupporting a ſingle Style, crowned by an obtuſe trifid Stigma. The Germen becomes a round Berry, with one Cell incloſing one hard Seed.

We have but one Species of this in *England*, viz.

CHIONANTHUS *pedunculis trifidis trifloris. Lin. Sp. Plant.* 8. Snowdrop Tree, or Fringe Tree, with trifid Foot Stalks ſupporting three Flowers. This is the *Amelanchier Virginiana lauroceraſi folio. Pet. Hort. Sicc.* 241. *Virginia Amelanchier* with a Laurel Leaf.

This Shrub is common in *South Carolina*, where it grows by the Side of Rivulets, and ſeldom is more than ten Feet high: The Leaves are as large as thoſe of the Laurel, but are of a much thinner Subſtance; the Flowers come out in *May*, hanging in long Bunches, and are of a pure white, from whence the Inhabitants call it Snowdrop Tree; and from the Flowers being cut into narrow Segments, they give it the Name of Fringe Tree: After the Flowers have fallen away, the Fruit appears, which becomes a black Berry, about the Size of Sloes, having one hard Seed in each.

This Tree is now more common in the curious Gardens in *England*, than it was formerly; many young Plants being raiſed from the Seeds brought from *America* lately: There have alſo been ſome Plants propagated by Layers, though they ſeldom take Root in leſs than two Years: Nor will they ever take Root, unleſs well ſupplied with Water in dry Weather.

The beſt Way to obtain good Plants, is from the Seeds which muſt be procured from *America*, for they never have produced any Fruit in this Country: The Seeds ſhould be ſown in ſmall Pots filled with freſh loamy Earth ſoon after they arrive, and ſhould be placed under a hot Bed Frame, where they may remain till the Beginning of *May*, when they muſt be removed to a Situation expoſed to the Morning Sun, and ſcreened from the Sun in the Middle of the Day: In dry Weather the Pots muſt be watered, and kept clean from Weeds; for as theſe Seeds lie in the Ground a whole Year before the Plants come up, they ſhould not be expoſed to the Sun the firſt Summer, but the following Autumn they ſhould be removed, and placed under a Frame, to protect the Seeds from being injured by the Froſt. If the Pots are plunged into a moderate hot Bed the Beginning of *March*, it will bring up the Plants much ſooner than they will otherwiſe riſe; by which Means they will get more Strength the firſt Summer, and be better able to reſiſt the Cold of the next Winter: While theſe Plants are very young, they will be in Danger of ſuffering by ſevere Froſt; but, when they have obtained Strength, they will reſiſt the greateſt Cold of our Climate in the open Air; therefore for the two or three firſt Winters, it will be proper to keep them under Shelter; ſo that the young Plants may remain in the Seed Pots all the firſt Summer, and following Winter; but in the Spring before they begin to ſhoot, they ſhould be ſhaken out of the Pots, and carefully ſeparated ſo as not to break off their Roots, and each planted in a ſmall Pot, filled with light loamy Soil, and plunged into a very moderate hot Bed, juſt to forward their taking freſh Root; then they ſhould be gradually inured to the open Air, and during the following Summer, the Pots ſhould be plunged into the Ground, to prevent the Earth from drying, in a Situation where they may enjoy the Morning Sun, but ſcreened from the great Heat at Noon. During the Summer Seaſon, they will require to be frequently watered, and kept clean from Weeds. The Autumn following, they ſhould be again placed under a hot Bed Frame to ſcreen them from Froſt, but they ſhould enjoy the free Air at all Times, when the Weather is mild. The *April* following, the Plants may be ſhaken out of the Pots, with the Ball of Earth to their Roots, and planted where they are deſigned to remain.

This Shrub delights in a moiſt, ſoft, loamy Soil, and if planted in a ſheltered Situation, will endure the Cold of our Winters very well in the open Air; but in dry Land, it is very ſubject to decay in warm Seaſons.

Where this Shrub grows naturally, it produces great Quantities of Flowers, and ſeems covered with Snow; but in *England* it flowers but ſeldom, and the Bunches of Flowers are produced very thinly, ſo make but little Appearance.

CHIRONIA. *Lin. Gen. Plant.* 227.

The *Characters* are,

The Flower hath a permanent Empalement of one Leaf, cut into five oblong Segments: It hath one Petal, with a roundiſh Tube the Size of the Empalement, but is divided into five equal Parts above, which ſpread open: It hath five ſhort broad Stamina, faſtened to the Top of the Tube, and terminated by large oblong Summits, which are erect and join together, and after the Flowers drop are ſpirally twiſted. It hath an oval Germen, ſituated in the Center, ſupporting a ſlender declining Style, crowned by a riſing Stigma in Form of a Head. The Germen becomes an oval Capſule with two Cells, filled with ſmall Seeds.

The *Species* are,

1. CHIRONIA *fruteſcens, capſulifera. Lin. Sp. Plant.* 190. Shrubby *Chironia* bearing Capſules. This is the *Centaurium minus Africanum, arboreſcens, latifolium, flore ruberrimo. Com. Rar. Pl.* 8. Leſſer Tree-like *African* Centaury, with a broad Leaf, and a very red Flower.

2. CHIRONIA *fruteſcens baccifera. Lin. Sp. Plant.* 190. Shrubby Berry-bearing *Chironia.* This is the *Centaurium minus arboreſcens pulpiferum. Com. Rar. Plant.* 9. Leſſer Tree-like Centaury with Seeds ſurrounded with Pulp.

Theſe Plants grow naturally at the *Cape of Good Hope*, from whence their Seeds were brought to *Holland*, and the Plants raiſed in ſome of the curious Gardens there, and have ſince been carried to the Curious in many Parts of *Europe*. The Seeds of the firſt Sort were ſent me from *Paris*, by Mr. *Richard*, Gardener to the King, at *Verſailles*, from which I raiſed ſeveral Plants, which have flowered in the *Chelſea* Garden ſeveral Years, but have not as yet perfected any Seeds.

It hath a fibrous Root, which ſpreads near the Surface of the Ground. The Stalks are round and inclining to be ligneous, but are of a very ſoft Texture; theſe grow from two to three Feet high, having ſeveral Branches on every ſide, which grow erect; theſe are garniſhed with ſucculent Leaves, which are an Inch or more in Length, and an eighth Part of an Inch broad, ending in an obtuſe Point. At the Ends of each Shoot the Flowers are produced, which are tubulous, and ſpread open at the Top like thoſe of Periwinkle; theſe are of a bright red Colour, and when there are a large number of the Flowers open on the ſame Plant, they make a very fine Appearance. In the Center of the Flower is placed an oval Germen, upon which there is fixed a recurved Style, having a blunt Stigma at the Top; this is ſurrounded by five incurved Stamina, each ſupporting a large Summit. When the Flowers fall away, the Germen becomes an inflated Capſule, which is filled with ſmall Seeds. The Flowers are produced from *June* to Autumn and the Seeds ripen in *October*. This Plant ſhould be placed in an airy Glaſs Caſe in Winter, where it may enjoy a dry Air, and much Sun, but will not thrive in a warm Stove, nor can it be well preſerved in a common Green-houſe, becauſe a damp moiſt Air will ſoon cauſe it to rot.

The Seeds ſhould be ſown in ſmall Pots filled with light ſandy Earth, and plunged into a moderate hot Bed, and muſt now and then be gently watered; ſometimes the Seeds will lie a long Time in the Ground, ſo that if the Plants do not appear the ſame Seaſon, the Pots ſhould not be diſturbed, but preſerved in Shelter till the following Spring, and then plunged into a freſh hot Bed, which will bring up the Plants in a ſhort Time if the Seeds are good. When the Plants are fit to remove, they ſhould be tranſplanted into ſmall Halfpenny Pots, four or five in each Pot, then plunge the Pots into a moderate hot Bed, and ſprinkle them with Water, and ſhade them every Day from the Sun till they have taken new Root, after which they muſt have a large Share of Air in warm Weather, to prevent their drawing up weak; when the Plants have obtained ſome Strength, they muſt be gradually inured to bear the open Air; but when they are expoſed abroad, if there ſhould happen much Rain, the Plants muſt be ſcreened from it, otherwiſe it will cauſe them to rot; when the Plants have filled the Pot with their Roots, they ſhould be parted, and each put into a ſeparate Pot, filled with light ſandy Earth, not rich with Dung, placing them in the Shade till they have taken freſh Root, then they may be removed to a warm ſheltered Situation, and mixed with ſuch other Plants as require but little Water; in which Situation they may remain till Autumn, when they muſt be placed in a dry airy Glaſs Caſe, and in Winter ſhould have very little Wet, but muſt enjoy the Sun as much as poſſible, in mild Weather ſhould have freſh Air admitted to them, but muſt be protected from Froſt; with this Management the Plants will thrive and produce Flowers the ſecond Year from Seed.

The 2d Sort riſes with a firmer Stalk than the firſt, which is round, jointed, and divides upward into a greater Number of Branches; theſe are garniſhed with ſhort narrow Leaves, pretty thick and ſucculent. The Flowers are produced at the End of the Branches, as thoſe of the firſt, of a fine red Colour, but not half ſo large; when theſe fall away, they are ſucceeded by oval pulpy Berries, in which are included many ſmall Seeds. This Sort continues flowering great Part of Summer and Autumn, and in warm Seaſons the Seeds will ripen in *England*.

It is propagated by Seeds in the ſame Manner as the Firſt, and the Plants require the ſame Treatment.

CHIVES, ſo titled by ſome, are the Stamina, which ſupport the Summits in the Center of Flowers.

CHIVETS, in *French*, are the little Offsets from the Roots of Plants, by which they are propagated.

CHONDRILLA. *Lin. Gen. Plant.* 815. *Tourn. Inſt.* [χόνδρος, *Gr.* a Cartilage], Gum Succory.

The *Characters* are,

The common Empalement is compoſed of many narrow cylindrical Scales, which are equal. The Flower is compoſed of many hermaphrodite Florets, which are uniform, and lie, imbricatim, like Tiles on a Houſe; theſe have one Petal, which is ſtretched out on one Side like a Tongue, and are indented at the Top in four or five Parts; they have each five ſhort hairy Stamina, terminated by cylindrical Summits. The Germen is ſituated under the Floret, having a Style the Length of the Stamina, crowned by two reflexed Stigmas; the Germen becomes a ſingle, oval, compreſſed Seed, crowned with a ſingle Down, and encloſed in the Empalement.

We have but one *Species* of this Genus, *viz.*

CHONDRILLA. *Lin. Hort. Cliff.* 383. Gum Succory. This is the *Chondrilla juncea viſcoſa arvenſis. C. B. P.* 30. Viſcous Field Gum Succory with ruſhy Stalks.

This Plant grows naturally in *Germany*, *Helvetia*, and *France*, on the Borders of the Fields, and is ſeldom preſerved in Gardens, becauſe the Roots are very apt to ſpread, and become troubleſome Weeds; and the Seeds having Down on their Tops, are carried by the Wind to a great Diſtance, ſo that the neighbouring Ground is filled with the Plants; the Roots of this ſtrike deep into the Ground, and ſpread out with thick Fibres on every Side, each of which, when cut, or broken into many Parts will ſhoot up a Plant, ſo that when this Plant hath obtained Poſſeſſion of the Ground, it is very difficult to root out. The Root ſends out a great Number of ſlender Stalks, which at their Bottom are garniſhed with oblong ſinuated Leaves, but thoſe above are very narrow and entire. The Flowers are produced from the Side and Top of the Branches, which are like thoſe of Lettuce, and are ſucceeded by Seeds of the ſame Form, crowned with Down. It flowers in *July*, and the Seeds ripen in *September*.

The other Species of this Genus which were enumerated in the former Editions, are referred to the *Lactuca* and *Crepis*.

CHRISTMAS FLOWER, or Black Hellebore. *See* Helleborus.

CHRISTOPHORIANA. *See* Actea.

CHRISANTHEMOIDES OSTEOSPERMON. *See* Oſteoſpermum.

CHRYSANTHEMUM. *Tourn. Inſt. R. H.* 491. *Lin. Gen. Plant.* 866. *Leucanthemum. Tourn. Inſt.* 492. [χρυσάνθεμον, *Gr.* from χρυσὸς, Gold, ἄνθεμος, a Flower, that is to ſay, Golden Flower,] Corn Marigold.

The *Characters* are,

It hath a compound Flower, the Rays being compoſed of female Florets, which are extended on one Side like a Tongue, and are indented in three Parts at the End; theſe have an oval Germen, ſupporting a ſlender Style, crowned by two obtuſe Stigmas. The hermaphrodite Flowers which compoſe the Diſk, are Funnel-ſhaped the Length of the Empalement, but it is divided into five Parts at the Top, which are ſpread open; theſe have five ſhort hairy Stamina, terminated by tubular cylindrical Summits, and have an oval Germen, with Style and Stigma like the female; the Germen afterward becomes a ſingle, oblong, naked Seed.

The *Species* are,

1. CHRYSANTHEMUM *foliis amplexicaulibus, ſupernè laciniatis, infernè dentato-ſerratis. Hort. Cliff.* 416. Corn Marigold with Leaves embracing the Stalks, the upper jaged, and the lower indented like a Saw. This is the *Chryſanthemum ſegetum. Cluſ. Hiſt.* Corn Marigold.

2. CHRYSANTHEMUM *foliis amplexicaulibus, oblongis, supernè ſerratis, infernè dentatis. Hort. Cliff.* 416. Corn Marigold with oblong Leaves, embracing the Stalks, the upper ones being ſawed, and the lower indented. This is the *Bellis ſylveſtris caule folioſo major. C. B. P.* 261. Greater wild Daiſy with a leafy Stalk.

3. CHRYSANTHEMUM *foliis lanceolatis, supernè ſerratis, utrinque acuminatis. Hort. Cliff.* 416. Corn Marigold with Spear-ſhaped Leaves, thoſe above being ſawed, and pointed on all Sides. This is the *Bellis major, radice repente, foliis latioribus, ſerratis. Mor.* Greater Daiſy with a creeping Root, and broad ſawed Leaves.

4. CHRYSANTHEMUM *foliis imis ſpathulato-lanceolatis, ſerratis, ſummis linearibus. Sauv. Monſp.* 87. Corn Marigold with lower Leaves, pointed like a Spear-ſhaped Spatula, and ſawed, and the upper ones linear. This is the *Leucanthemum montanum minus. Tourn. Inſt.* 492. Leſſer Mountain Ox-eye.

5. CHRYSANTHEMUM *foliis linearibus, ſubintegerrimis. Sauv. Monſp.* 87. Corn Marigold with narrow Leaves, which are entire. This is the *Leucauthemum gramineo folio. Tourn. Inſt.* 493. Ox-eye with a Graſs Leaf.

6. CHRYSANTHEMUM *foliis pinnatifidis, laciniis parallelis, integris, caule unifloris. Lin. Sp. Plant.* 889. Corn Marigold with many pointed Leaves, whoſe Segments are parallel and entire, and one Flower on each Stalk. This is the *Leucanthemum Alpinum, foliis Coronopi. Tourn. Inſt. Alpine* Ox-eye with a Hartſhorn Leaf.

7. CHRYSANTHEMUM *foliis pinnatis, inciſo-ſerratis, caule multifloro. Prod. Leyd.* 174. Corn Marigold with winged Leaves, with ſawed Segments, and many Flowers upon a Stalk. This is the *Tanacetum montanum inodorum, minore flore. C. B. P.* 132. Unſavory Mountain Tanſy with a leſſer Flower.

8. CHRYSANTHEMUM *foliis pinnatifidis, inciſis, extrorſum latioribus. Hort. Cliff.* 416. Corn Marigold with Wing-pointed cut Leaves, whoſe exterior Parts are broadeſt. This is the *Chryſanthemum Creticum. Cluſ. Hiſt.* 1. p. 334. Corn Marigold of *Crete*.

9. CHRYSANTHEMUM *foliis imis palmatis, foliolis linearibus, pinnatifidis. Sauv. Monſp.* 304. Corn Marigold, whoſe lower Leaves are palmated, and the ſmaller ones linear, and ending in many Points. This is the *Leucanthemum montanum foliis Chryſanthemi. Tourn.* Mountain Ox-eye with Corn Marigold Leaves.

10. CHRYSANTHEMUM *fruticoſum, foliis linearibus dentato-trifidis. Hort. Cliff.* 417. Shrubby Corn Marigold with narrow Leaves, having three Points, and indented. This is the *Leucanthemum Canarienſe, foliis Chryſanthemi, Pyrethri ſapore. Tourn. Inſt. Canary* Ox-eye with Corn Marigold Leaves, and the Taſte of Pelitory.

11. CHRYSANTHEMUM *floſculis omnibus uniformibus, hermaphroditis. Hort. Cliff.* 417. Corn Marigold, whoſe Florets are all uniform and hermaphrodite. This is the

Bellis ſpinoſa, foliis Agerati, C. B. P. 262. Prickly Daiſy with Maudlin Leaves.

12. CHRYSANTHEMUM *foliis linearibus, infernè apice dentatis, ſupernè integerrimis, pedunculis nudis unifloris.* Corn Marigold with narrow Leaves, thoſe on the lower Part being indented at their Points, the upper entire, and naked Foot Stalks with one Flower.

The 1ſt Sort is the common Corn Marigold, which grows naturally amongſt Corn, and the Borders of Corn Fields in *England*, ſo is rarely admitted into Gardens, but is inſerted to introduce the other Species.

The 2d Sort is the greater Daiſy, which ſtands in the Liſt of medicinal Plants in the *College Diſpenſatory*; this grows naturally in moiſt Paſtures. It riſes with Stalks near two Feet high, garniſhed with oblong indented Leaves, which embrace the Stalks with their Baſe. The Stalks are each terminated by one white Flower, ſhaped like the Daiſy, but four Times as large. It flowers in *June*.

The 3d Sort grows naturally in *North America*, but hath been long in the *Engliſh* Gardens; the Roots creep far under the Surface, and ſend up ſtrong Stalks more than three Feet high, garniſhed with long ſawed Leaves, ending inPoints; theſe Stalks divide upward into many ſmaller, each being terminated by a large, white, radiated Flower; theſe appear the End of *July* and *Auguſt*; it multiplies very faſt by its creeping Roots, and will thrive in any Soil or Situation.

The 4th Sort grows naturally upon the *Alps*, and other mountainous Places. I received it from *Verona*, near which it grows in Plenty; this ſends up a ſingle Stalk a Foot high, garniſhed with entire Leaves above, but the under Leaves, are ſawed on the Edges. The Stalk is terminated by one large white flower ſhaped like thoſe of the 3d Sort. It flowers in *June*, and the Seeds ripen in *Auguſt*. This Sort may be propagated by Seeds, which, if ſown in a ſhady Border, will come up in about ſix Weeks, and the Plants when fit to remove, may be tranſplanted into a ſhady Border, to remain, and require no other Care but to keep them clean from Weeds.

The 5th Sort grows naturally about *Montpelier*; this hath a perennial Root, from which ſprings up many narrow Graſs-like Leaves, and, between them, Stalks which riſe a Foot and a Half high, garniſhed with leaves the ſame as thoſe below. The Stalks are each terminated by one large white Flower, with a yellow Diſk, or Middle. This flowers in *June*, but rarely perfects Seed in *England*; ſo is propagated only by parting of the Roots; the beſt Time for this is in Autumn, that the Plants may get good Root before Winter.

The 7th Sort grows naturally on the *Alps*, and mountainous Places in *Germany*; this ſends out upright Stalks, garniſhed with Leaves cut into many parallel Segments, ſomewhat like thoſe of Buckſhorn Plantain. The Stalks riſe a Foot and a Half high, and are each terminated by a ſingle Flower of the ſame Form with thoſe of the laſt; it hath a perennial Root, and may be propagated by parting as the other.

The 8th Sort has been many Years cultivated in the Gardens for the Beauty of its Flowers; of this there are ſingle and double white Flowers, and the ſame with yellow Flowers; as theſe do not differ from each other in any Thing except the Colour, they are generally eſteemed one Species; but this is conſtant, for I have never found the Seeds ſaved from the white, produce yellow Flowers, nor thoſe of the yellow produce white.

There is alſo a Variety of theſe Colours with fiſtular Florets, which has accidentally riſen from Seeds of the other; theſe are generally titled Quill-leaved *Chryſanthemums*, but as the Seeds ſaved from theſe degenerate to the common Sorts, they do not merit a particular Denomination.

Theſe Plants are eſteemed annual, ſo the Seeds are uſually ſown upon a ſlender hot Bed in Spring, and the Plants treated in the ſame Manner as the *African* Marigold, for the Culture of which we ſhall refer the Reader to that Article; but as the Plants which riſe from Seeds, do many of them produce ſingle Flowers, although the Seeds are ſaved from the beſt double Flowers, therefore many Perſons now propagate theſe from Cuttings, to continue the double Sorts only; theſe Cuttings, taken from the Plants the Beginning of *September*, and planted in Pots, will readily take Root, and if they are placed under a hot Bed Frame to ſcreen them from the Froſt in Winter, letting them have free Air in mild Weather, they will live through the Winter, and in the Spring may be tranſplanted into the borders of the Flower Garden, where they will flower in *June*, and continue in Succeſſion till the Froſt puts a ſtop to them; by this Method all the Varieties may be continued without Variation, but the Plants propagated this Way by Cuttings will become barren ſoon, and will not produce Seeds.

The 9th Sort is a perennial Plant, which ſends out many Stalks from the Root, which divide into Branches on every Side, and are garniſhed with pretty thick Leaves, deeply cut into many Segments, like thoſe of the laſt Sort; theſe are of a pale green, the Flowers are produced at the End of the Branches, ſtanding upon pretty long, naked Foot Stalks; theſe are very like thoſe of the common Greater Daiſy in Size and Colour. It flowers in *June*, and continues till the End of *September*. This Sort ripens Seeds every Year in *England*, by which the Plant is eaſily propagated; for if they are ſown in Spring on a common Border, the Plants will come up in ſix Weeks; when theſe are fit to remove, they may be tranſplanted into a Nurſery Bed at about a Foot Diſtance every Way, and kept clean from Weeds till Autumn, when they may be removed to the Places where they are to remain. As theſe Plants extend their Branches pretty far on every Side, they ſhould be allowed at leaſt two Feet room; therefore are not proper for ſmall Gardens, but in large Gardens may have a Place for Variety.

If theſe Plants are planted in poor dry Land, or upon Lime Rubbiſh, they will not grow ſo vigorous as in good Ground, ſo they will endure the Cold better, and continue longer; for when their Leaves and Branches are replete with Moiſture, they are very apt to rot in the Winter, ſo are ſeldom of long Duration; but where the Plants have grown from the Joints of old Walls, I have known them continue in Vigour ſeveral Years.

The 10th Sort grows naturally in the *Canary* Iſlands, from whence it was brought to *England*, and has been long an Inhabitant in curious Gardens. It is called by the Gardeners Pellitory of *Spain*, from its warm Taſte, much reſembling the Taſte of that Plant.

This riſes with a ſhrubby Stalk near two Feet high, dividing into many Branches, garniſhed with pretty thick ſucculent Leaves, of a grayiſh Colour, cut into many narrow Segments, which are divided into three Parts at their Extremity. The Flowers come out from the Wings of the Leaves, ſtanding upon naked Foot Stalks, ſingly, which greatly reſemble thoſe of the common Chamomile; there is a Succeſſion of Flowers upon the ſame Plants great Part of the Year, for which it is chiefly eſteemed. This Plant will perfect Seeds in *England*, when the Seaſons are favourable; but as the Cuttings take Root ſo eaſily, if planted during any of the Summer Months, the Seeds are rarely ſown.

As this Plant is a Native of warm Countries, it will not live in the open Air in *England* during Winter; therefore when the Cuttings have made good Roots, they ſhould be each planted in a ſeparate Pot, and placed in the Shade till they have taken freſh Root, then they may be removed to a ſheltered Situation, to remain till Autumn, when they muſt be removed into the Greenhouſe to protect them from Froſt, but in mild Weather they ſhould have Plenty of free Air, and, during Winter, ſhould be frequently refreſhed with Water, but it muſt not be given in too great Plenty; in Summer they require more Moiſture, and ſhould be treated as other hardier Kinds of exotick Plants.

The 11th Sort grows naturally at the *Cape of Good Hope*, from whence the Seeds were brought many Years paſt to *Holland*, where the Plants were firſt raiſed, and from thence all *Europe* has been ſupplied with it. This riſes with a ſhrubby Stalk about two Feet high, which divides into many ſlender Branches upward, garniſhed with oblong Leaves, much indented on their Edges, each Indenture terminating in a ſoft Spine; theſe are of a pale green, ſet cloſe to the Branches. The Flowers are produced on ſhort Foot Stalks from the Wings of the Leaves, toward the upper Part of the Branches; theſe are globular, and formed of a great Number of hermaphrodite Florets, which are tubular and even, having no Rays, are naked, and of a deep yellow Colour. The Flowers appear in *June*, and continue till the Froſt ſtops them; this may be propagated by Cuttings as the laſt, and the Plants treated in the ſame Way.

The 12th Sort grows naturally about *Madrid*; this hath a low ſhrubby Stalk, which ſeldom riſes a Foot high, putting out ſeveral ſlender ligneous Branches, garniſhed with narrow, pale, green Leaves, thoſe on the lower Part of the Branches are indented at their Extremity in ſeveral Parts, but the upper Leaves are entire; from the End of each Branch is produced a naked Foot Stalk, ſix Inches long, ſuſtaining one radiated Flower, of a Sulphur Colour. The Flowers come out in *June* and *July*, but ſeldom ripen Seeds in *England*; this Sort muſt be ſheltered under a common Frame in Winter, for unleſs it proves very favourable, the Plants will not live in the open Air here. It may be propagated by Cuttings in Summer, as the two laſt Sorts, but theſe Cuttings do not ſo readily take Root as thoſe do.

CHRYSOBALANUS. *Lin. Gen. Plant.* 585. *Icaco. Plum. Nov. Gen.* 44. Cocoa Plum.

The *Characters* are,

The Empalement of the Flower is of one Leaf, divided into 5 *Parts, almoſt to the Middle. The Flower hath* 5 *Petals, which ſpread open, and* 10 *Stamina,* 5 *of which are longer than the Petals, the other are ſhorter, and are terminated by Heart-ſhaped Summits. In the Center is ſituated an oval Germen, ſupporting a trifid ſhort Style, crowned by obtuſe Stigmas. The Germen becomes an oval fleſhy Berry, incloſing a Nut with five longitudinal Furrows.*

The *Species* are,

1. CHRYSOBALANUS *foliis ovatis, emarginatis, floribus racemoſis, caule fruticoſo. Chryſobalanus* with oval indented Leaves, Flowers growing in Bunches, and a ſhrubby Stalk. This is the *Frutex Cotini ferè folio craſſo, in ſumitate deliquium patiente, fructu ovali cæruleo oſſiculum anguloſum continente.* The Cocoa Plum.

2. CHRYSOBALANUS *foliis decompoſitis, foliolis ovatis integerrimis. Chryſobalanus* with decompounded Leaves, whoſe Lobes are oval and entire. This is the *Icaco fructu purpureo. Plum. Icaco* with purple Fruit.

The 1ſt Sort grows naturally in the *Bahama* Iſlands, and other Parts of *America*, but commonly near the Sea. It riſes with a ſhrubby Stalk, about eight or ten Feet high, ſending out ſeveral Side Branches, covered with a dark brown Bark, ſpotted with white; theſe are garniſhed with oval ſtiff Leavs indented at their Ends, in form of a Heart; theſe are placed alternately on the Branches from the Wings of the Leaves, and alſo at the Diviſion of the Branches, the Flowers are produced, which grow in looſe Bunches; theſe are ſmall and white, having ten Stamina in each, five of which ſtand out beyond the Petals of the Flowers, the other five are ſhorter, and are terminated by yellow Summits. The Flowers are ſucceeded by oval Plums about the Size of Damſons; ſome of theſe are blue, ſome red, and others yellow, they have a ſweet luſcious Taſte. The *Spaniards* in the Iſland of *Cuba* make a Conſerve of theſe. The Stone is ſhaped like a Pear, and has five longitudinal Ridges on it.

The Seeds of the 2d Sort were ſent me from *Jamaica*, with the Title of *Plumiers*; the Stones were exactly the ſame Shape of thoſe of the former, but the Plants have Leaves which are compounded of ſeveral winged Leaves, branched out oppoſite, each having ſix or ſeven Pair of Lobes. This Sort hath not flowered in *England*, ſo I can give no farther Account of it.

As theſe Trees are Natives of the warm Parts of *America*, they will not thrive in *England*, unleſs kept in a warm Stove. They are propagated by Seeds, which muſt be obtained from the Countries where the Plants naturally grow; theſe muſt be ſown in the Spring in ſmall Pots filled with light Earth, and plunged into a hot Bed of Tanners Bark, obſerving to water the Pots every other Day, if the Bed is warm, but not let them have much at each Time. In ſix Weeks the Plants will come up, and, if properly managed, will be fit to remove in a Month's Time after, when they ſhould be carefully ſeparated, and each planted in a ſmall Pot filled with light Kitchen Garden Earth, and then plunged into a hot Bed again, obſerving to ſhade them from the Sun till they have taken freſh Root, after which they muſt have Air every Day in Proportion to the Warmth of the Seaſon, and their Waterings during Summer ſhould be frequent, but ſparing. In Autumn the Plants muſt be removed into the Bark Stove, and plunged into the Tan Bed, and in Winter they muſt not have too much Water, leſt it occaſions their throwing off their Leaves. In Summer they muſt have a good Share of Air, but the Plants in the Stove ſhould be conſtantly treated in the ſame Manner as other tender Plants from the ſame Countries.

CHRYSOCOMA. *Lin. Gen. Plant.* 845. *Dillen. Gen* 14. *Coma aurea. Boerh.* 1. p. 121. Goldylocks.

The *Characters* are,

The common Empalement is imbricated, the Scales are narrow, the outer being convex and pointed; the Flower is compoſed of many hermaphrodite Florets, which are tubular, equal, and Funnel-ſhaped, cut into five Parts at the Brim which turn back; theſe have each five ſhort ſlender Stamina, terminated by cylindrical Summits; they have an oblong Germen, ſupporting a ſlender Style, crowned by two oblong depreſſed Stigmas. The Germen afterward becomes a ſingle oblong compreſſed Seed crowned with hairy Down.

The *Species* are,

1. CHRYSOCOMA *herbacea, foliis linearibus, glabris calycibus laxis. Lin. Sp. Plant.* 841. Herbaceous Goldylocks with narrow ſmooth Leaves, and looſe Empalements. This is the *Coma aurea Germanica linariæ folio. Park. Theat.* 688. *German* Goldylocks.

2. CHRYSOCOMA *herbacea paniculata, foliis lanceolatis trinerviis punctatis, nudis. Lin. Sp. Plant.* 841. Herbaceous Goldylocks with Flowers growing in Panicles, and Spear-ſhaped Leaves, having three Nerves. This is the *Conyza lini foliis aſperis, rigidis, & nervoſis floribus luteis umbellatis. Amman. Ruth.* 192. Fleabane with rough, rigid, Flax Leaves, having Nerves, and yellow Flowers growing in Umbels.

3. CHRYSOCOMA *fruticoſa foliis linearibus dorſo decurrentibus. Hort. Cliff.* Shrubby Goldylocks with very narrow Leaves, whoſe back Parts run along the Stalks. This is the *Coma aurea Africana fruticans, foliis linariæ anguſtis, major. Com. Hort. Amſt.* Greater, ſhrubby, *African* Goldylocks with narrow Toad-flax Leaves.

4. CHRYSOCOMA *ſubfruticoſa, foliis linearibus ſubtus piloſis, floribus ante floreſcentiam cernuis. Hort. Cliff.* 397. Shrubby Goldylocks with very narrow Leaves, which are hairy on their under Side, and Flowers nodding before they are blown. This is the *Coma aurea foliis linariæ anguſtioribus minor. Hort. Amſt.* 2. p. 89. Leſſer Goldylocks with narrow Toad-flax Leaves.

5. CHRYSOCOMA *ſuffruticoſa, foliis linearibus recurvis, ſcabris, ciliatis, floribus erectis. Lin. Sp. Plant.* 841. Shrubby Goldylocks with narrow rough Leaves which are recurved aud hairy, and erect Flowers. This is the *Conyza Africana, tenuifolia, ſubfruteſcens, flore aureo. Hort. Elth.* 104. *Tab.* 88. Narrow leaved *African*, ſhrubby Fleabane with a Golden Flower.

The 1ſt Sort grows naturally in *Germany, France* and *Italy*; this hath a perennial Root, and an annual Stalk; the Stalks riſe about a Foot and a Half high, which are round, ſtiff, and cloſely garniſhed with long, narrow, ſmooth Leaves, which come out without any Order, of a pale green Colour; the upper Part of the Stalk divides into many ſlender Foot Salks, each ſuſtaining a ſingle Head of Flowers, which are compoſed of many hermaphrodite Florets, contained in one common Empalement, having very narrow Scales. The Flowers are of a bright yellow, and ſtand diſpoſed on the Top of the Stalk, in form of an Umbel. Theſe appear in *July*, and in favourable Seaſons are ſucceeded by Seeds, which ripen in *September*, ſoon after which the Stalks decay to the Root, and new ones ariſe the following Spring.

This Plant is generally propagated by parting the Roots, that being the moſt expeditious Method; for the ſeedling Plants do not flower till the ſecond or third Year. The beſt time to remove the Plants, and part their Roots, is ſoon after the Stalks decay in Autumn, that they may get freſh Roots before Winter. It delights in a dry looſe Soil, in which it will live in the open Air, and propagate by its Roots very faſt, but in ſtrong wet Land, the Roots often rot in Winter.

The 2d Sort grows naturally in *Siberia*, from whence the Seeds were ſent to *Peterſburgh*, Part of which I received from the late Dr. *Amman*: This Plant hath a perennial creeping Root, which ſpreads on every Side to a conſiderable Diſtance, ſending up many erect Stalks, garniſhed with flat Spear-ſhaped Leaves, ending in Points; theſe are rough, and have three longitudinal Veins; the upper Part of the Stalks branch out, and form looſe Panicles of yellow Flowers, which are larger than thoſe of the former Sort. This Flowers in *June* and *July*, and the Seeds ripen in Autumn.

It propagates too faſt by its creeping Roots, which often extend two or three Feet every Way, in the Compaſs of one Year, and interfere with the neighbouring Flowers; but as the Plants will grow in any Soil or Situation, a few Roots may be planted on the Side of extenſive rural Walks round the Borders of Fields, where they will require no Care, and their Flowers will make a good Appearance, and continue long in Beauty.

The 3d Sort grows naturally at the *Cape of Good Hope*. This riſes with a ligneous Stalk about a Foot high, dividing into many ſmall Branches, which grow two Feet high, garniſhed with narrow Leaves, of a deep green, coming out on every Side without Order; the back Part of each Leaf hath a ſmall ſhort Appendix, which runs along the Stalks. The Flowers are produced at the End of the Branches, on ſlender naked Foot Stalks; theſe are of a pale yellow, and ſhaped like thoſe of the former Sorts, but larger. This Plant flowers great Part of the Year, for which it is chiefly eſteemed; the Seeds ripen very well in Autumn, which if ſown on a common Border of light Earth in Spring, the Plants will come up, and may be tranſplanted into Pots, to be removed into Shelter in Winter, for theſe Plants will not live through the Winter, in the open Air in *England*.

The moſt expeditious Method of propagating this, is by Cuttings, which, if planted in a common Border, in any of the Summer Months, and covered with Hand Glaſſes, will eaſily take Root, if ſhaded from the Sun, and duly watered: When theſe have gotten good Roots they ſhould be carefully taken up, and each planted in a Pot, filled with light Earth, placing them in the Shade till they have taken new Root; then they may be expoſed with other hardy exoticks till Autumn, when they muſt be placed in the Green-houſe during Winter; they ſhould enjoy a large Share of free Air in mild Weather, for they only require Protection from Froſt, ſo muſt not be too tenderly treated.

The 4th Sort is a Native of the *Cape of Good Hope*, from whence I received the Seeds; this is a much leſs Plant than the former, ſeldom riſing above a Foot high; it hath a ſhrubby Stalk, branching out in the ſame Manner; the leaves are ſhorter, and a little hairy; the Flowers are not half ſo large, of a pale Sulphur Colour, and nod on one Side before they are blown. This alſo flowers great part of the Year, and ripens Seeds very well; but this is generally propagated as the former, and the Plants require the ſame Treatment.

The 5th Sort is alſo a Native of the ſame Country as the two former; this hath a low ſhrubby Stalk, which ſeldom riſes above ſix Inches high, branching out on every Side; the Leaves come out on every Side the Branches, which are very narrow, ſhort, rough, and reflexed; the Flowers ſtand ſingle on the Top of naked Foot Stalks, which ariſe from the upper Part of the Branches; theſe Flowers are larger than thoſe of the laſt, and ſtand erect. This requires the ſame Treatment as the two former, and is propagated by Cuttings.

CHRYSOPHYLLUM. *Lin. Gen. Plant.* 233. *Cainito. Plum. Nov. Gen.* 9. *Tab.* 9. The Star Apple.

The *Characters* are,

The Empalement is permanent, and conſiſts of five ſmall, roundiſh concave Leaves; the Flower is compoſed of five Petals, which ſpread open, and are cut in the Middle into two Parts; it hath five Stamina placed alternate to the Segments of the Petals and terminated by Heart-ſhaped Summits: The oval Germen is ſituated in the Center, ſupporting a ſhort Style, crowned by an obtuſe Stigma. The Germen afterward becomes a large, oval fleſhy Fruit, incloſing three or four flat Seeds, having hard Shells.

The *Species* are,

1. Chrysophyllum *foliis oblongo-ovatis, supernè glabris, ſubtus ferrugineis, floribus alaribus corymboſis. Chryſophyllum* with oblong oval Leaves, ſmooth above, and of an Iron Colour on their under Side, and Flowers growing in a Corymbus from the Sides of the Stalks. This is the *Cainito folio ſubtus aureo, fructu olivæ formi. Plum. Nov. Gen.* 10. The Damſon Tree.

2. Chrysophyllum *foliis lanceolatis, ſubtus aureis, floribus racemoſis terminalibus. Chryſophyllum* with Spear-ſhaped Leaves, of a Gold Colour on their under Side, and Flowers growing in Bunches from the Ends of the Branches. This is the *Cainito folio ſubtus aureo, fructu maliformi. Plum. Nov. Gen.* 10. The Star Apple.

Theſe Trees grow naturally in the *Weſt-Indies*, where the firſt Sort riſes from 20 to 30 Feet high, dividing into many Branches, which are garniſhed with oblong oval Leaves, ſmooth above, and of an Iron Colour on their under Side; the Flowers come out from the Side of the Branches, at the ſeting on of the Leaves, in round Cluſters which are ſucceeded by oval, ſmooth, pulpy Fruit, incloſing three or four hard flat Seeds.

The 2d Sort riſes with an upright Trunk to the Height of 30 or 40 Feet, dividing into many ſlender Branches, garniſhed with Spear-ſhaped Leaves, coming out without Order: From the Wings of the Leaves, and Extremity of the Branches, the Flowers are produced in Bunches, which are ſucceeded by round pulpy Fruit the Size of a Golden Pippin, containing many flat hard Seeds.

The Fruit of both Sorts are very rough and aſtringent at firſt, but by lying ſome Time after they are gathered, become mellow, like the Medlar. The Timber is uſed in Buildings, and for Shingles to cover Houſes.

Theſe Plants are preſerved in ſeveral curious Gardens for the Beauty of their Leaves whoſe under Sides ſhine like Sattin, the upper Sides are of a deep green. The Leaves continue all the Year, ſo make a very pretty Appearance in the Stove at all Seaſons.

Theſe Trees, being Natives of the warmeſt Parts of the World, cannot be preſerved in this country, without being kept in the warmeſt Stoves; and ſhould always remain in the hot Bed of Tanners Bark, otherwiſe they will make but little Progreſs. They are propagated by Seeds, which muſt be procured from the Places of their Growth; for they do not produce Fruit in *Europe*. Theſe Seeds muſt be freſh, otherwiſe they will not grow; and if they are ſent over in Sand, it will preſerve them from drying too much; when the Seeds arrive, they muſt be ſown as ſoon as poſſible in ſmall Pots filled with light freſh Earth, and plunged into a good hot Bed of Tanners Bark. If the Seeds are good, and the Bed in a proper Temperature of Warmth, the Plants will appear in five or ſix Weeks; and in about two Months after, will be ſtrong enough to tranſplant; in doing of which the Plants, with all the Earth, ſhould be ſhaken out of the Pots very carefully, and ſeparated with their Roots entire, and each planted into a ſmall Pot filled with freſh rich Earth, and plunged again into a hot Bed of Tanners Bark; watering and ſhading them until they have taken freſh Root. If the hot Bed in which theſe Plants are plunged, is from Time to Time ſtirred, and a little freſh Tan added, to renew the Heat when it declines, the Plants will make good Progreſs; and in three or four Months will be near a Foot high, and may then be ſhifted into Pots a ſmall Size larger than thoſe they before were in. If theſe Plants are conſtantly kept in a warm Bed in the Stove, and ſhifted twice a Year, to renew the Earth to their Roots, they will thrive very faſt, and put out their Side Branches, ſo as to make a handſome Appearance in the Stove; for though they do not produce either Flowers or Fruit, yet as they keep their Leaves through the Year, which are ſo very beautiful, they deſerve a Place better than moſt other Plants. The chief Care they require, is to keep them conſtantly in a proper Degree of Heat, and never to put them into too large Pots; in Winter they ſhould have Water about twice a Week, and in the Depth of it they ſhould not have much at each Time.

Theſe Trees are frequently propagated in the *Weſt-Indies*, by planting their Branches (as I have been informed by Perſons of Credit); but I have not heard of their being propagated in *England* by that Method.

CHRYSOSPLENIUM. Golden Saxifrage.

The *Characters* are,

The Empalement is divided into four or five Parts, which ſpread open, are coloured, and permanent. The Flower hath no Petals, but eight or ten Stamina, which are ſhort, erect, and ſtand oppoſite to the Angles of the Empalement, terminated by ſingle Summits: The Germen is immerſed in the Empalement, ſupporting two ſhort Styles, crowned by obtuſe Stigma. The Germen becomes a Capſule with two Beaks, opening with two Valves, and filled with ſmall Seeds.

The *Species* are,

1. Chrysosplenium *foliis alternis. Flor. Suec.* 317. Golden Saxifrage with alternate Leaves. This is the *Saxifraga aurea foliis pediculis oblongis inſidentibus. Raii Syn. Hiſt.* 205. Golden Saxifrage with Leaves growing upon long Foot Stalks.

2. Chrysosplenium *foliis oppoſitis. Sauv. Monſp.* 128. Golden Saxifrage with oppoſite Leaves. This is the *Chryſoſplenium foliis amplioribus auriculatis. Tourn. Inſt.* 146. Golden Saxifrage with larger eared Leaves.

Theſe two Plants are found growing wild in many

Parts of *England*, upon marſhy Soils and Bogs, as alſo in moiſt ſhady Woods, and are ſeldom propagated in Gardens; where, if any have Curioſity to cultivate them, they muſt be planted in very moiſt ſhady Places, or they will not thrive. They flower in *March* and *April*.

CIBOULS, or CHIBOULS. *See* Cepa.

CICER, *Lin. Gen. Plant.* 783. *Tourn. Inſt. R. H. Tab.* 210.

The *Characters* are,

The Empalement of the Flower is cut into five Segments, four of which lie upon the Standard; the two middle which are the longeſt are joined, the other is under the Keel. The Flower is of the Butterfly Kind; the Standard is large, roundiſh, and plain; the Wings are much ſhorter and obtuſe, the Keel is ſhorter than the Wings, and is ſharp pointed. It hath ten Stamina, nine of them being joined and the tenth is ſeparate, terminated by ſingle Summits. It hath an oval Germen ſupporting a ſingle Style, crowned by an obtuſe Stigma. The Germen afterward becomes a turgid ſwelling Pod of a rhomboidal Figure, incloſing two roundiſh Seeds, with a Protuberance on their Side.

There is but one *Species* of this Genus, *viz.*

Cicer *foliolis ſerratis. Hort. Cliff.* 370. Chich Peaſe with ſawed Leaves. This is the *Cicer ſativum. C. B. P.* 347. Garden Chich Peaſe.

There is a Variety of this with a red Seed, which differs from it in nothing but the Colour.

It is much cultivated in *Spain*, being one of the Ingredients in their *Olios*, and is there called *Garavance*; it is alſo cultivated in *France*, but rarely ſown in *England*.

The Plant is annual, ſhooting out ſeveral Stalks from the Root, about two Feet long; theſe are hairy, and garniſhed with long winged Leaves of a grayiſh Colour, compoſed of 7 or 9 Pair of ſmall roundiſh Leaves (or Lobes) terminated by an odd one, ſawed on their Edges. From the Side of the Branches come out the Flowers, ſometimes one, at other Times two together. They are ſhaped like thoſe of Peaſe, but are much ſmaller and white, ſtanding on long Foot Stalks; theſe are ſucceeded by ſhort hairy Pods, including two Seeds in each, of the Size of common Peaſe, but have a little Knob or Protuberance on one Side.

The Seeds may be ſown in Spring, as Peaſe, making Drills with a Hoe, about an Inch and Half deep, in which the Seeds ſhould be ſown two Inches aſunder, then with a Rake draw the Earth into the Drill to cover the Seeds. The Drills ſhould be made at 3 Feet Diſtance from each other, that there may be Room for their Branches to ſpread when the Plants are fully grown, alſo to hoe the Ground between them, to clean it from Weeds, which is all the Culture they require.

This Plant flowers in *June*, and the Seeds ripen in *Auguſt*; but unleſs the Seaſon proves warm and dry, the Plants decay before the Seeds are ripe.

CICHORIUM, *Lin. Gen. Plant.* 825. *Tourn. Inſt. R. H. Tab.* 272. Succory.

The *Characters* are,

The Flower hath a common ſcaly Empalement, which at firſt is cylindrical, but is afterward expanded; the Scales are narrow, Spear-ſhaped, and equal. The Flower is compoſed of many hermaphrodite Florets, which are plain, uniform, and ſtand circularly, each having one Petal, which is Tongue-ſhaped, and cut into five Segments. They have five ſhort hairy Stamina, terminated by five cornered cylindrical Summits. The Germen is ſituated under the Petal, ſupporting a ſlender Style, crowned by two turning Stigmas: The Germen afterward becomes a ſingle Seed, incloſed with a Down, and ſhut up in the Empalement.

The *Species* are,

1. Cichorium *ſylveſtre ſive officinarum. C. B. P.* 126 Wild Succory.

2. Cichorium *ſpinoſum. C. B. P.* Prickly Succory.

3. Cichorium *latifolium, ſive endivia vulgaris. C. B. P.* 125. Broad leaved Succory, or common Endive.

4. Cichorium *caule ſimplici, foliis fimbriatis, criſpis.* Succory with a ſingle Stalk, and fringed, curled Leaves. This is the *Endivia criſpa. C. B. P.* Curled Endive.

The 1ſt Sort grows naturally by the Sides of Roads and in ſhady Lanes, in many Parts of *England*: This has been ſuppoſed to differ from the Garden Succory only by the latter being cultivated; indeed, moſt of the Writers on Botany, have confounded the two Sorts together; for the Garden Succory deſcribed in moſt of the old Books, I take to be the broad leaved Endive, which is the 3d Sort here enumerated, for I have many Years cultivated both Sorts in the Garden, without finding either of them alter. There is an eſſential Difference between theſe, for the wild Succory hath a perennial creeping Root, whereas the other is at moſt but a biennial Plant; and if the Seeds of the latter are ſown in the Spring, the Plants will flower and produce Seeds the ſame Year, and periſh in Autumn, ſo that it may rather be called annual. The wild Succory ſends out from the Roots long Leaves, which are jagged to the Mid-rib, each Segment ending in a Point; from between theſe ariſe the Stalks, which grow from 3 to 4 Feet high, garniſhed with Leaves, ſhaped like thoſe at the Bottom, but ſmaller, and embrace the Stalks at their Baſe. Theſe branch out above into ſeveral ſmaller Stalks, which have the ſame Leaves, but ſmaller and leſs jagged; the Flowers are produced from the Side of the Stalks, which are of a fine blue Colour; theſe are ſucceeded by oblong Seeds, incloſed in a Down. It flowers in *June* and *July*, and the Seeds ripen in *September*.

The 2d Sort grows naturally on the Sea Coaſts in *Sicily* and the Iſlands of the *Archipelago*. This ſends out from the Root many long Leaves, indented on their Edges, and ſpread flat on the Ground; from between theſe ariſe the Stalks, which have very few Leaves, and thoſe ſmall and entire: The Stalks are divided in Forks upward, from between theſe come out the Flowers, of a pale blue, which are ſucceeded by Seeds ſhaped like thoſe of the common Sort; the Ends of the ſmaller Branches are terminated by Star-like Spines, which are very ſharp. This Plant is biennial in *England*, and in cold Winters is frequently killed. It flowers and ſeeds about the ſame Time as the former Sort, and may be treated as the Endive.

The broad leaved Succory or Endive, differs from the wild Sort in its Duration, the Root always periſhing after it has ripened Seeds: The Leaves are broader, rounder at the Top, and not lacinated on the Sides as the Leaves of the wild; the Branches are more horizontal, and the Stalks never riſe ſo high.

This Sort is not much cultivated in the *Engliſh* Gardens at preſent, for the curled Endive being much tenderer, and not ſo bitter, is generally preferred to it, The broad leaved and curled Endive have been ſuppoſed only Varieties from each other, accidentally produced by Culture; but having cultivated both near 40 Years, I could never find they ever altered, otherwiſe than by the curled Sort coming more or leſs curled; for the common broad leaved Endive, hath much ſhorter Leaves than the curled, which are rounded at their Ends; theſe have only a few ſlight Indentures on their Edges, and the Stalks grow more erect, having but few Leaves upon them. This Sort, when blanched, is very apt to have a bitter Taſte, which has occaſioned its being generally neglected in *England*, but in *Italy* it is ſtill cultivated in their Gardens.

All the Sorts of Succory are eſteemed aperitive and diuretic, opening Obſtructions of the Liver, and good for the Jaundice; it provokes Urine, and cleanſes the urinary Paſſages of ſlimy Humours, which may ſtop their Paſſage.

The curled Endive is now much cultivated, being one of the principal Ingredients in the Sallads of Autumn and Winter, for which Purpoſe it is continued as long as the Seaſons will permit. I ſhall therefore give Directions for managing this Plant, ſo as to have it in Perfection during the Autumn and Winter Months.

The firſt ſowing of theſe Seeds is in *May*, for thoſe ſown earlier, generally run up to Seed, before they have arrived to a proper Size for blanching; and it frequently happens, that the Seed, ſown in *May* in rich Grounds near *London*, will run to Seeds the ſame Autumn; but in colder Situations, they are not ſo apt to run up, therefore there ſhould be ſome Seeds ſown about the Middle or latter End of that Month. The ſecond ſowing ſhould be about the Middle of *June*, and the laſt Time in the Middle of *July*. From theſe three different Crops, there will be a Supply for the Table during the whole Seaſon; for there will be Plants of each ſowing, very different in their Growth, ſo that there will be three different Crops from the ſame Beds.

When the Plants come up they muſt be kept clean from Weeds, and in dry Weather duly watered, to keep them growing till they are fit to tranſplant, when there ſhould be an open Spot of rich Ground prepared to receive them, in Size proportionable to the Quantity intended. When the Ground is well dug and levelled, if it ſhould be very dry, it muſt be well watered to prepare it to receive the Plants; when they ſhould be drawn up from the Seed Bed carefully, ſo as not to break their Roots, drawing out all the largeſt Plants, leaving the ſmall ones to get more Strength; which, when they have Room to grow, by taking away the large ones, they will ſoon do. As the Plants are drawn up, they ſhould be placed with their Roots even, all the ſame Way, and every Handful as they are drawn, ſhould have the Tops of their Leaves ſhortened, to make them of equal Length: This will render the planting much eaſier, than when the Plants are promiſcuouſly mixed, Heads and Tails: Then the Ground ſhould be marked out in Rows at one Foot aſunder, and the Plants ſet ten Inches diſtant in the Rows, cloſing the Earth well to their Roots, and let them be well watered; repeat this every other Evening, till the Plants have taken good Root, after which keep them clean from Weeds.

When the Seed Bed has been thus thinned, it ſhould be well cleaned from Weeds and watered, which will encourage the Growth of the remaining Plants, ſo that in ten Days or a Fortnight after, another thinning may be made, which ſhould be tranſplanted in the ſame Manner. And at about the ſame Diſtance of Time, the third and laſt drawing may be tranſplanted.

Thoſe Plants which were the firſt tranſplanted, will be fit to blanch by the latter End of *July* at fartheſt; and if they are properly managed, in three Weeks or a Month they will be ſufficiently blanched for Uſe, which will be as ſoon as theſe Sallads are commonly required; for during the Continuance of good Cos Lettuce, few Perſons care for Endive in their Sallads; nor, indeed, is it ſo proper for warm Weather. If any of the Plants ſhould put out Flower Stems, they ſhould be immediately pulled up and carried away, being good for nothing, ſo ſhould not be left to incommode the neighbouring Plants. As the Quantity neceſſary for a middling Family is not very great, there ſhould not be too many Plants tied up to blanch at the ſame Time, therefore the largeſt ſhould be firſt tied, and in a Week after thoſe of the next Size; ſo that there may be three different Times of blanching the Plants, on the ſame Spot of Ground. But as in ſome large Families there is a great Conſumption of this Herb for Soups, ſo the Quantities of Plants ſhould be proportionably greater, at each Time of planting and blanching. The Manner of blanching is next to be treated of, in order to this you ſhould provide a Parcel of ſmall Oſier Twigs (or Baſs Mat) to tie up ſome of the largeſt Heads to blanch; which ſhould be done in a dry Afternoon, when there is neither Dew nor Rain to moiſten the Leaves in the Middle of the Plants, which would occaſion their rotting ſoon after their being tied up. The Manner of doing it is as follows, *viz.* You muſt firſt gather up all the inner Leaves of the Plant in a regular Order, into one Hand, and then take up thoſe on the Outſide that are ſound, pulling off and throwing away, all the rotten and decayed Leaves which lie next the Ground; obſerving to place the Outſide Leaves all round the Middle ones, as near as poſſible to the natural Order of their Growth, ſo as not to croſs each other: Then having got the whole Plant cloſe up in your Hand, tie it up with the Twig, Baſs, *&c.* at about two Inches below the Top, very cloſe; and about a Week after go over the Plants again, and give them another Tie about the Middle of the Plant, to prevent the Heart Leaves from burſting out on one Side, which they are ſubject to do, as the Plants grow, if not prevented this Way.

In doing this you need only tie up the largeſt Plants firſt, and ſo go over the Piece once a Week, as the Plants increaſe in their Growth; by which Means you will continue the Crop longer, than if they were all tied up at one Time: For when they are quite blanched, which will be in three Weeks or a Month after tying, they will not hold ſound and good above ten Days or a Fortnight, eſpecially if the Seaſon proves wet: Therefore I would adviſe to ſow at three or four different Seaſons, to have a Supply as long as the Weather will permit. But in order to this, you muſt tranſplant all the Plants of the laſt ſowing under warm Walls, Pales, or Hedges, to ſcreen the Plants from Froſt; and if the Winter ſhould prove very ſharp, cover them with Peaſe

Haulm, or ſuch other light Covering, which ſhould be conſtantly taken off in mild Weather: Theſe Borders ſhould alſo be as dry as poſſible, for theſe Plants are very ſubject to rot, if planted in a moiſt Soil in Winter.

Although I before directed tying up the Plants to blanch them, yet this is only to be underſtood for the two firſt Sowings; for after *October*, when the Nights begin to be froſty, thoſe Plants which are ſo far above Ground will be liable to be much prejudiced thereby, eſpecially if they are not covered in froſty Weather; therefore the beſt Method is, to take up your Plants of the latter Sowings in a very dry Day, and with a large flat pointed Dibble, plant them into the Sides of Trenches of Earth, which ſhould be laid very upright, ſideways, towards the Sun, with the Tops of the Plants only out of the Ground, ſo that the haſty Rains may run off, and the Plants be kept dry, and ſecured from Froſts.

The Plants thus planted, will be blanched fit for Uſe in about three Weeks or a Month's Time, after which it will not keep good long; you ſhould therefore continue planting freſh ones into Trenches every Week or Fortnight at fartheſt, to Supply the Table; and thoſe which were laſt tranſplanted out of the Seed Beds, ſhould be preſerved till *February* or *March*, before they are planted to blanch; ſo that from this you may be ſupplied until the Beginning of *April*, or later: For at this laſt Planting into the Trenches, it will keep longer than in Winter, the Days growing longer; and the Sun, advancing with more Strength, dries up the Moiſture much ſooner than in Winter, which will prevent the rotting of theſe Plants.

When your Endive is blanched enough for Uſe, you muſt dig it up with a Spade; and having cleared it from all the Outſide green and decayed Leaves, waſh it well in two or three different Waters to clear it the better from Slugs, and other Vermin, which commonly ſhelter themſelves among the Leaves, and then you may ſerve it up to the Table with other Sallading.

In order to have a Supply of good Seeds for the next Seaſon, look over thoſe Borders where the laſt Crop was tranſplanted, before you put them into the Trenches to blanch; and make Choice of ſome of the largeſt, ſoundeſt, and moſt curled Plants, in Number according to the Quantity of Seeds required: For a ſmall Family, a dozen of good Plants will produce Seeds enough; and for a large, two dozen or thirty Plants.

Theſe ſhould be taken up and tranſplanted under a Hedge or Pale, at about 18 Inches Diſtance, in one Row about ten Inches from the Hedge, &c. This Work ſhould be done the Beginning of *March*, if the Seaſon is mild, otherwiſe it may be deferred a Fortnight longer. When the Flower Stems begin to advance, they ſhould be ſupported with a Packthread faſtened to Nails driven into the Pale, or to the Stakes of the Hedge, and run along before the Stems, to draw them upright cloſe to the Hedge or Pale, otherwiſe they will be liable to break with the ſtrong Winds. Obſerve alſo to keep them clear from Weeds, and about the Beginning of *July* your Seeds will begin to ripen; as ſoon as you find they are quite ripe, cut off the Stalks, and expoſe them to the Sun upon a coarſe Cloth to dry; then beat out the Seeds, which muſt be dried, and put in Bags of Paper, and preſerved for Uſe in ſome dry Place. But I would here caution you, not to wait for all the Seeds ripening upon the ſame Plant; if ſo, all the firſt ripe and beſt of the Seeds will ſcatter and be loſt before the other are near ripe; ſo great a Difference is there in the Seeds of the ſame Plant being ripe.

The wild Succory (of which there are ſome Varieties in the Colour of the Flowers) is ſeldom propagated in Gardens; it growing wild in Lanes and Dunghills in divers Parts of *England*, where the Herb Women gather it, and ſupply the Markets for medicinal Uſe.

CICUTA properly ſignifies an Hollow between two Knots, of the Stalks or Reeds; of which the Shepherds uſed to make their Pipes, as *Virgil* ſings;

Eſt mihi diſparibus ſeptem compacta Cicutis
Fiſtula——

CICUTA. *Lin. Gen. Plant.* 316. *Sium Raii Syn.* 212. Water Hemlock.

The *Characters are.*

It is a Plant with an umbellated Flower; the principal Umbel is compoſed of ſeveral ſmaller (called Rays;) theſe are equal, roundiſh and briſtly: The great Umbel hath no Involucrum, but the ſmaller have, which are compoſed of many ſhort Leaves. The Flowers have each five oval Petals nearly equal, which turn inward; they have five hairy Stamina, which are longer than the Petals, terminated by ſingle Summits. The Germen is ſituated below the Flower, ſupporting two ſlender Styles, which are permanent and longer than the Petals, crowned by Stigmas in Form of a Head. The Germen afterward becomes a roundiſh channelled Fruit divided in two Parts, containing two oval Seeds, plain on one Side and convex on the other.

The *Species* are,

1. Cicuta *umbellis folio oppoſitis, petiolis marginatis obtuſis. Lin. Sp. Plant.* 255. Hemlock with Umbels oppoſite to the Leaves, and obtuſe, marginated Foot Stalks. This is the *Sium erucæ folio. C. B. P.* 154. *Sium* with a Rocket Leaf. And the *Cicuta aquatica Geſneri. J. B.* 111. Water Hemlock of *Geſner.*

2. Cicuta *foliorum ſerraturis mucronatis, petiolis membranaceis, apice bilobis. Lin. Sp. Plant.* 256. Hemlock with pointed Serratures to the Leaves, and membranaceous Foot Stalks ending in two Lobes. This is the *Angelica Virginiana foliis acutioribus, ſemine ſtriato minore, cumini ſapore & odore. Mor. Hiſt.* 3. p. 281. *Virginia Angelica* with pointed Leaves, and a ſmall channelled Seed, having the Taſte and Smell of Cumin.

The 1ſt Sort grows naturally in ſtanding Waters in *England*, ſo is never propagated; for unleſs there is a conſiderable Depth of Water for the Plants to root in, they will not grow; I have ſeveral Times tranſplanted them into Ponds, where they have grown one Summer, but have not continued through the Winter.

It grows near 4 Feet high, with a branching hollow Stalk, garniſhed with winged Leaves: The Stalks are terminated by Umbels of yellowiſh Flowers, ſucceeded by ſmall channelled Seeds like thoſe of Parſley. It flowers in *June* and *July*; the Seeds ripen in Autumn.

The 2d Sort grows naturally in *North America*, from whence the Seeds have been brought to *England*, where the Plants are preſerved in Botanick Gardens for Variety. This is propagated by Seeds, ſown in Autumn, in a ſhady Border, where the Plants will come up in Spring, and require no Care but to keep them clean.

CICUTARIA. *See* Liguſticum.

CINARA. *See* Cynara.

CINERARIA. *See* Othonna.

CIRCEA, *Lin. Gen. Plant.* 24. *Tourn. Inſt. R. H.* 301. *Tab.* 155. Enchanter's Nightſhade.

The *Characters* are,

The Empalement of the Flower is compoſed of two oval concave Leaves: The Flower hath two Heart-ſhaped Petals, which are equal and ſpread open; it hath two erect hairy Stamina, terminated by roundiſh Summits. The Germen is ſituated under the Flower, ſupporting a ſlender Style, crowned by an obtuſe bordered Stigma: The Empalement becomes a rough oval Capſule with two Cells opening Lengthways, each containing a ſingle oblong Seed.

The *Species* are,

1. CIRCEA *caule erecto, racemis pluribus. Lin. Sp. P.* 9. Enchanter's Nightſhade, with an upright Stalk and many Spikes of Flowers. This is the *Circea lutetiana. Lob. Icon.* 266. Common Enchanter's Nightſhade.

2. CIRCEA *caule adſcendente, racemo unico. Lin. Sp. Plant.* 9. Enchanter's Nightſhade, with an aſcending Stalk and a ſingle Spike. This is the *Circea minima. Col.* p. 2. 80. Leaſt Enchanter's Nightſhade.

The 1ſt Sort grows naturally in ſhady Woods, and under Hedges, in *England.* This Plant hath a creeping Root, by which it multiplies greatly. The Stalks are upright, and riſe a Foot and Half high, garniſhed with Heart-ſhaped Leaves placed oppoſite, upon pretty long Foot Stalks: Theſe are of a dark green on their upper Side, and pale on the under Side. The Stalks are terminated by looſe Spikes of Flowers, branched out into three or four ſmall Spikes. The Flowers are ſmall and white, having but two Petals, oppoſite to which are ſituated the two Stamina. After the Flowers fall away, the Empalement of the Flower becomes a rough Capſule, incloſing two oblong Seeds.

The 2d Sort grows at the Foot of Mountains, in *Germany*; it alſo grows naturally in a Wood near the *Hague*, from whence I brought it to *England.* This Sort riſes ſix Inches high, with a ſlender Stalk, garniſhed with Leaves ſhaped like thoſe of the former Sort, but ſmaller, and indented on their Edges. The Flowers are produced on ſingle looſe Spikes at the Top of the Stalks, which are ſmaller than the former Sort, but of the ſame Form and Colour. Theſe Plants flower in *June*, and their Seeds ripen in *Auguſt*; they both multiply exceedingly by their creeping Roots, ſo are ſeldom kept in Gardens, unleſs for Variety.

If the Roots are planted in any ſhady moiſt Part of a Garden, they will increaſe faſt enough without Care.

CIRCULATION of the Sap. *See* Sap.

CIRRI are thoſe fine Strings, or Fibres put out from the Stalks of Plants, by which they faſten themſelves to Walls, Pales, or Trees, for Support, as Ivy, *&c.*

CIRSIUM. *See* Carduus.

CISSAMPELOS. *Lin. Gen. Plant.* 993. *Caapeba. Plum. Nov. Gen.* 33. *Tab.* 29.

The *Characters* are,

It is male and female in different Plants; the male Flowers have an Empalement of one Leaf, divided into four Parts; they have no Petals, but a ſingle Style riſes in the Center, which extends beyond the Empalement, terminated by a large Summit, having four Lobes. The female Flowers have an Empalement like the male, and inſtead of Petals, there are four Nectariums ſtanding round the oval Germen, which is hairy, and afterward becomes a ſucculent Berry, incloſing a ſingle Seed.

The *Species* are,

1. CISSAMPELOS *foliis peltatis cordatis ſubtus villoſis, floribus racemoſis alaribus. Ciſſampelos* with Target Heart-ſhaped Leaves which are hairy, and Flowers growing in Bunches riſing from the Sides of the Stalks. This is the *Caapeba folio orbiculari, & umbilicato lævi Plum. Caapeba* with a round ſmooth umbilicated Leaf.

2. CISSAMPELOS *foliis cordatis, tomentoſis, floribus racemoſis, alaribus. Ciſſampelos* with woolly, Heart-ſhaped Leaves, and Flowers growing in Bunches from the Sides of the Stalks. *Caapeba folio orbiculari non umbilicato. Plum. Nov. Gen.* 33. *Caapeba* with a round Leaf not umbilicated, called Velvet Leaf in *America.*

Theſe Plants grow naturally in the warmeſt Parts of *America*, where they twiſt about the neighbouring Shrubs, and riſe five or ſix Feet. The firſt Sort hath round Heart-ſhaped Leaves, whoſe Foot Stalks are ſet within the Baſe of the Leaf, reſembling an ancient Target; theſe are hairy on their under Side, and have pretty long ſlender Foot Stalks. Toward the upper Part of the Stalks, the Flowers come out from the Wings of the Leaves; thoſe of the male Plants grow in ſhort Spikes or Cluſters, and are of a pale herbaceous Colour; but the female Flowers are produced in long looſe Racemi from the Side of the Stalks, and are ſucceeded by a ſingle pulpy Berry incloſing a ſingle Seed.

The 2d Sort hath round Heart-ſhaped Leaves, extremely woolly and ſoft to the Touch; theſe have their Foot Stalks placed at the Baſe, between the two Ears; the Flowers come out in Bunches from the Side of the Stalks, as the firſt. The Stalks and every Part of the Plant, is covered with a ſoft woolly Down.

The Seeds of both theſe Plants were ſent me from *Jamaica*, and ſucceeded in the *Chelſea* Garden, where the Plants produced their Flowers for ſeveral Years; and the Fruit of the firſt Sort were produced, but theſe would not grow, though they ſeemed to be perfectly ripened; but they grew at ſome Diſtance from the male Plants, ſo were probably not impregnated.

Theſe Plants are propagated by Seeds, which ſhould be ſown upon a hot Bed in the Spring; and the Plants muſt afterward be treated in the ſame Way as other tender Exoticks, keeping them conſtantly in the Bark Stove, otherwiſe they will not live in this Country.

The firſt Sort is ſuppoſed to be the *Pareira*, whoſe Root has been ſo much eſteemed as a Diuretick.

CISTUS. *Lin. Gen. Plant.* 598. *Tourn. Inſt. R. H.* 259. *Tab.* 136. Rock-roſe.

The *Characters* are,

The Flower hath a five leaved Empalement which is permanent, two of the middle alternate Leaves being ſmaller than the other. The Flower hath five large roundiſh Petals which ſpread open; it hath a great Number of hairy Stamina, which are ſhorter than the Petals, and are terminated by ſmall roundiſh Summits. In the Center is ſituated a roundiſh Germen ſupporting a ſingle Style the Length of the Stamina, crowned by a plain orbicular Stigma: The Germen becomes an oval cloſe Capſule, having in ſome five, and others ten Cells, filled with ſmall roundiſh Seeds.

The *Species* are,

1. Cistus *arboreſcens foliis ovatis, ſeſſilibus, utrinque, villoſis, rugoſis, floribus umbellatis terminalibus.* Tree Rock-roſe with oval Leaves growing cloſe to the Branches, which are hairy and rough, and Flowers growing in an Umbel at the End of the Branches. This is the *Ciſtus mas major, folio rotundiore. J. B.* Greater male *Ciſtus*, or Rock-roſe, with a rounder Leaf.

2. Cistus *arboreſcens foliis ſeſſilibus, utrinque villoſis, rugoſis: inferioribus ovatis baſi connatis, ſummis lanceolatis. Hort. Cliff.* 205. Tree Rock-roſe with Leaves ſet cloſe to the Branches, which are hairy and rough on each Side, the under being oval and joined at their Baſe, but the upper Spear-ſhaped. *Ciſtus mas folio longiore incano. J. B.* Male *Ciſtus* with a longer hoary Leaf.

3. Cistus *arboreſcens, foliis ovato-lanceolatis, baſi connatis, hirſutis, rugoſis, pudunculis florum longioribus.* Tree Rock-roſe with oval Spear-ſhaped Leaves joined at their Baſe, which are hairy and rough, and longer Foot Stalks to the Flowers. This is the *Ciſtus mas, folio breviore. C. B. P.* Male *Ciſtus* with a ſhorter Leaf.

4. Cistus *arboreſcens, foliis ovatis, obtuſis, villoſis, ſubtus nervoſis rugoſis, floribus amplioribus.* Tree Rock-roſe, with oval, obtuſe, hairy Leaves, which are nervous and rough on their under Side, and larger Flowers. *Ciſtus mas Luſitanicus, folio ampliſſimo incano. Tourn.* Male *Portugal Ciſtus* with a very large hoary Leaf.

5. Cistus *arboreſcens villoſus, foliis lanceolatis, viridibus, baſi connatis, floribus alaribus & terminalibus ſeſſilibus, calycibus acutis.* Hairy Tree Rock-roſe with green, Spear-ſhaped Leaves joined at their Baſe, Flowers proceeding from the Sides and Ends of the Branches, and ſitting cloſe, and ſharp pointed Empalements.

6. Cistus *arboreſcens foliis lanceolatis, ſuprà lævibus, petiolis baſi coalitis vaginantibus.* Tree Rock-roſe with Spear-ſhaped Leaves, ſmooth on their upper Side, and their Foot Stalks joining like Sheaths. *Ciſtus ladanifera Hiſpanica incana. C. B. P. Spaniſh* hoary Gum *Ciſtus*.

7. Cistus *arboreſcens foliis oblongis, tomentoſis, incanis, baſi connatis, ſupra lævibus infernè nervoſis.* Tree Rock-roſe, with oblong hoary woolly Leaves joined at their Baſe, and ſmooth above, but nervous on their under Side. This is the *Ciſtus mas folio oblongo incano. C. B. P.* 464. Male *Ciſtus* with an oblong hoary Leaf.

8. Cistus *fruteſcens, ramis patulis, foliis ovatis petiolatis, hirſutis, pedunculis nudis.* Shrubby Rock-roſe, with ſpreading Branches, oval, hairy Leaves having Foot Stalks, and the Foot Stalks of the Flowers naked. This is the *Ciſtus fœmina, folio ſalviæ, ſupina humiſparſa. C. B. P.* Low ſpreading female *Ciſtus* with a Sage Leaf.

9. Cistus *arboreſcens, foliis ovato-lanceolatis, hirſutis, marginibus undulatis, floribus terminalibus.* Tree Rock-roſe with oval, Spear-ſhaped, hairy Leaves, waved on their Borders, and Flowers terminating the Branches. *Ciſtus ladanifera Cretica flore purpureo. Tourn.* Gum bearing *Ciſtus* of *Crete* with a purple Flower.

10. Cistus *fruticoſus, foliis lineari-lanceolatis, hirſutis, ſeſſilibus, floribus terminalibus.* Shrubby Rock-roſe with narrow Spear-ſhaped, hairy Leaves ſitting cloſe to the Branches, and Flowers terminating the Stalks. This is the *Ciſtus ledon, foliis oleæ ſed anguſtioribus. C. B. P.* 167. Gum *Ciſtus* with an Olive Leaf, but narrower.

11. Cistus *arboreſcens, foliis lanceolatis, acutis, ſubtus incanis, petiolatis, ſuprà glabris, petiolis baſi connatis.* Tree Rock-roſe, with Spear-ſhaped, pointed Leaves, white on their under Side, and having Foot Stalks, but ſmooth above, and having the Foot Stalks joined at their Baſe. This is the *Ciſtus ledon foliis laurinis. C. B. P.* 476. Gum *Ciſtus* with Bay Leaves.

12. Cistus *foliis oblongo-cordatis, glabris, petiolis, longioribus, caule fruticoſo.* Rock-roſe with oblong, Heart-ſhaped, ſmooth Leaves, longer Foot Stalks, and a ſhrubby Stalk.

13. Cistus *arboreſcens, foliis lanceolatis, ſeſſilibus utrinque villoſis, trinerviis, alis nudis. Hort. Cliff.* 205. Tree Rock-roſe with Spear-ſhaped Leaves ſitting cloſe to the Branches, hairy on both Sides, and having three Nerves. This is the *Ciſtus ladanifera Monſpelienſium. C. B. P.* 467. Gum *Ciſtus* of *Montpelier*.

14. Cistus *arboreſcens, foliis lineari-lanceolatis, ſubtus incanis, trinerviis, petalis ſubrotundis.* Tree Rock-roſe with narrow Spear-ſhaped Leaves, hoary on their under Side, and having three Nerves, with roundiſh Petals. This is the *Ciſtus ladanifera Hiſpanica, ſalicis folio, flore albo, maculâ punicante inſignito. Tourn. Inſt. R. H.* 260. *Spaniſh* Gum bearing *Ciſtus*, with a Willow Leaf, and a white Flower ſpotted with purple.

15. Cistus *foliis lanceolatis, ſupernè glabris, infernè incanis, trinerviis, margine undulatis, caule fruticoſo.* Rock-roſe with Spear-ſhaped Leaves, which are ſmooth on their upper Side and hoary on their under, having three Nerves, waved Edges, and a ſhrubby Stalk. This is the *Ciſtus ledon latifolium Creticum. J. B.* 2. 9. Broad leaved Gum *Ciſtus* of *Crete*.

16. Cistus *arboreſcens foliis oblongo-cordatis acuminatis ſeſſilibus nervoſis.* Tree Rock-roſe with oblong, Heart-ſhaped, pointed Leaves, having Nerves, and ſitting cloſe to the Branches. This is the *Ciſtus ledon foliis populi nigræ major. C. B. P.* 467. Gum *Ciſtus* with the larger black Poplar Leaf.

17. Cistus *foliis ovatis, incanis, infernè petiolatis, ſupernè coalitis, caule fruticoſo.* Rock-roſe with oval, hoary Leaves, thoſe beneath having Foot Stalks, and the upper ones joined at their Baſe, and a ſhrubby Stalk. This is the *Ciſtus Halimi, folio* 1. *Cluſ. Hiſt.* 1. p. 71. *Ciſtus* with Sea Purſlain Leaves.

18. Cistus *foliis lineari-lanceolatis, incanis, ſeſſilibus, floribus racemoſis caule fruticoſo.* Rock-roſe with narrow Spear-ſhaped Leaves, which are hoary, and ſit cloſe to the Branches, Flowers growing in Cluſters, and a ſhrubby Stalk. *Ciſtus folio Halimi longiore incano. J. B. Ciſtus* with the longer, hoary, Sea Purſlain Leaf.

Theſe Plants all grow naturally in the South of *France*, in *Spain*, and *Portugal*, from whence their Seeds have been brought to *England*, where many of the Sorts are now cultivated in the Nurſeries for Sale. The firſt Sort hath a ſtrong woody Stem, covered with a rough Bark, which riſes three or four Feet high dividing into many Branches, ſo as to form a large buſhy Head; theſe are garniſhed with oval hairy Leaves, placed oppoſite, and ſit cloſe to the Branches, having ſeveral ſmaller Leaves of the ſame Form riſing from the ſame Joint. The Flowers are produced at the End of the Branches, four or five ſtanding together, almoſt in Form of an Umbel, but rarely more than one is open at the ſame Time; theſe are compoſed of five large roundiſh Petals of a purple

Colour, which ſpread open like a Roſe, having a great Number of Stamina, ſurrounding the oval Germen in the Center, terminated by ſmall, roundiſh, yellow Summits; theſe Flowers are of but ſhort Duration, generally falling off the ſame Day they expand; but there is a Succeſſion of freſh Flowers every Day for a conſiderable Time. After the Flowers are paſt, the Germen ſwells to an oval Seed Veſſel, ſitting in the Empalement, which is hairy; theſe Capſules have ten Cells, which are full of ſmall roundiſh Seeds. This Sort flowers in *May* and *June*, and the Seeds ripen in Autumn; there is generally more Flowers produced in *September* and *October* if the Autumn proves favourable, and where the Plants are protected from Froſt, they frequently produce ſome all the Winter Seaſon.

The 2d Sort differs from the 1ſt in the Shape of the Leaves, which are longer and whiter; thoſe on the lower Part of the Branches are oval, and join at their Baſe, ſurrounding the Stalks; but the upper Leaves are Spear-ſhaped and diſtinct; the Flowers are larger, and of a paler purple Colour. This flowers and ripens Seeds at the ſame Time with the firſt.

The 3d Sort differs from both the former, in having ſhorter and greener Leaves, which are joined at their Baſe, and are hairy. The Foot Stalks of the Flowers are much longer, and the Flowers ſmaller, but of a deeper purple. This flowers and ſeeds at the ſame Time with the two former, and the Shrubs grow as large as the firſt Sort.

The 4th Sort hath much larger, and rounder Leaves than either of the former, which are hairy, and ſmooth on their upper Side, but rough, and full of Veins on their under; the Branches are white and hairy, and the Flowers are very large, and of a light purple Colour. This flowers at the ſame Time.

The 5th Sort doth not riſe ſo high as either of the former, but ſends out Branches near the Root, which are hairy and erect; theſe are garniſhed with Spear-ſhaped Leaves, of a dark green Colour, and join at their Baſe, ſurrounding the Stalk. At each Joint comes out a very ſlender Branch, having three Pair of ſmall Leaves of the ſame Shape with the other, and terminated by a ſingle Flower, and the Ends of the Branches have three or four Flowers ſitting cloſe without Foot Stalks. The Flowers are of a deep purple, and like thoſe of the firſt. This flowers at the ſame Time.

The 6th Sort riſes five or ſix Feet, with a ſtrong woody Stalk, ſending out many hairy Branches, garniſhed with Spear-ſhaped Leaves, ſmooth on their upper Side, but veined on their under, having ſhort Foot Stalks, which join at their Baſe, where they form a Sort of Sheath to the Branch. The Flowers come out at the End of the Branches, which are large, of a light purple Colour, and reſembling thoſe of the 4th Sort.

The 7th Sort hath erect Branches, which come out from the lower Part of the Stalk, and are woolly; theſe are garniſhed with oblong hoary Leaves, covered with a white Down, which are ſmooth above, but veined on their under Side, joining at their Baſe, where they ſurround the Stalk; the Flowers are produced at the End of the Branches, they are of a bright purple, and large. This flowers at the ſame Time with the others.

The 8th Sort hath a ſlender ſmooth Stalk, covered with a brown Bark, which never riſes more than three Feet high, ſending out many horizontal weak Branches, which ſpread very wide, and are garniſhed with ſmall oval Leaves, which are hairy, ſtanding upon ſhort Foot Stalks. The Flowers come out at the Wings of the Leaves, upon long naked Foot Stalks; theſe are white, and ſomewhat ſmaller than thoſe of the other Sorts. This flowers in *June*, *July*, and *Auguſt*.

The 9th Sort grows naturally in the Iſlands of the *Archipelago*; this is the Plant which produces the *Labdanum*, hereafter mentioned, it riſes three or four Feet high, with a woody Stalk, ſending out many lateral Branches covered with a brown Bark, and garniſhed with oval, Spear-ſhaped, hairy Leaves, with waved and curled Borders; theſe in warm Seaſons ſweat a glutinous Liquid, which ſpreads on the Surface of the Leaves, and is very clammy and ſweet ſcented. The Flowers come out at the End of the Branches, on ſhort hairy Foot Stalks; they are of a deep purple, and about the Size of a ſingle Roſe; theſe appear in *June* and *July*.

The 10th Sort riſes with a ſhrubby Stalk about four Feet high, the Branches are very hairy, glutinous, and grow erect, and are garniſhed with long narrow Leaves ending in Points, which are hairy, and of a deep green on both Sides, having a deep longitudinal Furrow on their upper Side, made by the Mid-rib, which is prominent on the under Side, the Flowers ſtand upon long Foot Stalks at the End of the Branches, of a pale Sulphur Colour, having a bordered Empalement, which is cut into five acute Parts at the Top. This flowers in *June*, *July*, and *Auguſt*, and the Seeds ripen in Autumn.

The 11th Sort riſes with a ſtrong woody Stem, to the Height of five or ſix Feet, ſending out many erect Branches, garniſhed with Spear-ſhaped Leaves ending in Points; theſe are thick, white on their under Side, of a dark green above, and very glutinous in warm Weather. The Flowers are produced at the End of the Branches, upon long naked Foot Stalks, which branch on their Sides into ſmall Foot Stalks, each ſuſtaining one large white Flower, having a hairy Empalement. This Sort flowers in *June* and *July*.

The 12th Sort riſes with a ſmooth ſhrubby Stalk, 4 or 5 Feet high, ſending out many ſlender ligneous Branches, covered with a ſmooth brown Bark; theſe are garniſhed with ſmooth oblong Heart-ſhaped Leaves, and have long Foot Stalks. The Flowers are produced at the End of the Branches, ſtanding upon pretty long Foot Stalks; they are white, and appear in *June*, *July*, and *Auguſt*, but rarely produce Seeds in *England*.

The 13th Sort riſes with a ſlender ſhrubby Stalk from 3 to 4 Feet high, ſending out many Branches from the Bottom, which are hairy, and garniſhed with Spear-ſhaped Leaves of a very dark green, having three longitudinal Veins in each, and in warm Weather are covered with a glutinous ſweet-ſcented Subſtance, which exudes from their Pores. The Flower Stalks which come out at the End of the Branches, are long, naked, and ſuſtain many white Flowers, riſing above each other, their Empalements are bordered, and end in ſharp Points. This flowers at the ſame Time with the laſt.

The 14th Sort riſes with a woody Stem to the Height of 5 or 6 Feet, ſending out many Side Branches from the Bottom, the whole Length; theſe are ſmooth, covered with a reddiſh brown Bark, and garniſhed with narrow Spear-ſhaped Leaves, whitiſh on their under Side, of a dark green above, having three longitudinal Veins. The Flowers are produced at the End of the Branches, on ſhort Foot Stalks, and are compoſed of 5 very large roundiſh white Petals, each having a large purple Spot at their Baſe. The whole Plant exudes a ſweet glutinous Subſtance in warm Weather, which hath a ſtrong balſamic Scent, ſo as to perfume the Air to a great Diſtance. This flowers in *June*, *July*, and *Auguſt*.

There is a Variety of this with white Flowers, having no purple Spots, but is in all other Reſpects the ſame.

The 15th Sort riſes with a ſhrubby Stalk to the ſame Height as the laſt, ſending out many Branches on every Side, garniſhed with Spear-ſhaped Leaves, of a thick Conſiſtence, which are ſmooth on their upper Side, of a very dark green Colour, and white on their under Side; theſe are very clammy, eſpecially in warm Weather; the Flowers are produced at the End of the Branches, on ſhort Foot Stalks; they are very large, white, and have a broad, dark, purple Spot at the Baſe of each Petal; this differs from the former Sort in the Shape and Size of their Leaves; thoſe of this Sort being much ſhorter and broader, and are very white on their under Side. The Side Branches are ſhorter, and the Leaves ſtand much cloſer on them; the Flowers are larger, and the whole Plant, is much more glutinous. It flowers moſt Part of Summer.

The 16th Sort hath a ſtiff, ſlender, woody Stalk, which ſends out many Branches the whole Length, and riſes to the Height of 6 or 7 Feet; the Leaves are large, Heart-ſhaped, thin, and of a light green Colour; theſe ſit cloſe to the Branches, and have many Nerves; the Flowers are produced at the End of the Branches, upon naked Foot Stalks, they are white, and fade to a pale Sulphur Colour when they fall off. This flowers in *June* and *July*, and is at preſent rare in the *Engliſh* Gardens.

The 17th Sort hath an upright ſhrubby Stalk, which riſes 4 or 5 Feet high, ſending out many Branches, from the Ground upward, ſo as to form a large Buſh. The Branches are channelled, and hoary. The Leaves are oval, ſtanding oppoſite; thoſe on the lower Part of the Branches have Foot Stalks, but upward they coaleſce at their Baſe, and ſurround the Stalk; theſe are very white. The Foot Stalks of the Flowers which riſe at the End of the Branches, are a Foot in Length, naked, hairy, and put out two or four ſhorter Foot Stalks on the Side, each ſupporting three or four Flowers, and the Stalk is terminated by ſeveral Flowers, each ſtanding on a ſhort Foot Stalk. The Flowers are large, of a bright yellow, but of ſhort Duration, their Empalements are hairy, and ſharp pointed. This flowers in *June* and *July*, and at preſent is but in few *Engliſh* Gardens.

The 18th Sort hath been long in the *Engliſh* Gardens; this riſes with a ſlender woody Stalk, 3 or 4 Feet high, ſending out many ſlender Branches, garniſhed with narrow, Spear-ſhaped, hoary Leaves, which ſit cloſe to the Branches; from the Wings of the Leaves, come out ſlender Branches, which have two or three Pair of ſmall Leaves, and are terminated by looſe Bunches of Flowers, each ſtanding on a ſlender Foot Stalk. The Flowers are of a dirty Sulphur Colour, and appear in *June* and *July*, but are never ſucceeded by Seeds here.

This Sort will not live abroad in Winter, ſo is always placed in a Green-houſe, where its hoary Leaves, which continue all the Year, make a Variety.

All the various Kinds of *Ciſtus* are very great Ornaments to a Garden; their Flowers are produced in great Plenty all over the Shrubs, which though but of ſhort Duration, are ſucceeded by freſh ones almoſt every Day for above two Months ſucceſſively; theſe Flowers are many of them about the Bigneſs of a middling Roſe, but ſingle, and of different Colours, and continue there throughout the Year.

Theſe Plants are all of them, except the laſt, hardy enough to live in the open Air in *England*, unleſs in very ſevere Winters, which often deſtroy them, ſo that a Plant or two of each Sort may be kept in Pots, and ſheltered in Winter, to preſerve the Kinds; the reſt may be intermixed with other Shrubs, where they will make a pretty Diverſity; and in ſuch places where they are ſheltered by other Plants, they will endure the Cold much better than where they are ſcattered ſingly in the Borders. Many of theſe Plants will grow to the Height of five or ſix Feet, and will have large ſpreading Heads, provided they are permitted to grow uncut; but if they are ever trimmed, it ſhould be only ſo much as to prevent their Heads from growing too large for their Stems; for whenever this happens, they are apt to fall on the Ground, and appear unſightly.

Theſe Shrubs are propagated by Seeds, and Cuttings; but the latter Method is ſeldom practiſed, unleſs for thoſe Sorts which do not produce Seeds in *England*; theſe are the 12th, 17th, and 18th Sorts, all the others generally produce Plenty of Seeds, eſpecially thoſe Plants which came from Seeds, for thoſe which are propagated by Cuttings, are very ſubject to become barren, which is common to many other Plants.

The Seeds of theſe Plants may be ſown in Spring on a common Border of light Earth, where the Plants will come up in 5 or 6 Weeks, and, if they are kept clear from Weeds, and thinned where too cloſe, they will grow eight or ten Inches high the ſame Year; but as theſe Plants, when young, are liable to Injury from hard Froſt, therefore they ſhould be tranſplanted when about an Inch high, ſome into ſmall Pots filled with light Earth, that they may be removed into ſhelter in Winter, and the others into a warm Border, at about ſix Inches Diſtance each Way; thoſe which are potted muſt be ſet in a ſhady Situation till they have taken new Root; and thoſe planted in the Border muſt be ſhaded every Day with Mats till they are rooted, after which the latter will require no other Care but to keep them clean from Weeds till Autumn, when they ſhould have Hoops placed over them, they may be covered in froſty Weather; thoſe in the Pots may be removed into an open Situation, ſo ſoon as they have taken new Root, where they may remain till the End of *October*, but during the Summer they muſt be frequently watered; then they ſhould be placed under a hot Bed Frame to ſcreen them from the Cold in Winter, but, at all Times, when the Weather is mild, they ſhould be fully expoſed to the open Air, and only covered in Froſts; with this Management the Plants will thrive much better than when they are more tenderly treated.

The above Method is what the Gardeners generally practiſe; but thoſe who are deſirous to have their Plants come forward, ſhould ſow the Seeds on a moderate hot Bed in the Spring, which will bring up the Plants very ſoon, but theſe muſt have Plenty of Air when they appear, otherwiſe they will draw up very weak; when the Plants are fit to remove, they ſhould be each planted into a ſmall Pot, and plunged into a very moderate hot Bed, obſerving to ſhade them till they have taken freſh Root, then they muſt have Plenty of Air admitted to them every Day in good Weather, to prevent their drawing up weak; and by Degrees they muſt be hardened, ſo as to be removed into the open Air the Beginning of *June*, and then they may be treated in the ſame Manner as is before directed for the other ſeedling Plants; by bringing the Plants forward in the Spring in this Method, they will grow to the Height of a Foot, or more, the firſt Summer, and have many lateral Branches, ſo will be ſtrong enough to plant abroad the following Spring, and moſt of them will flower the ſucceeding Summer, whereas thoſe which are ſown in the full Ground, rarely flower till the Year after, nor will they be ſo ſtrong, or capable to reſiſt the Cold of the ſecond Winter, as theſe which have been brought forward.

The Spring following, theſe Plants may be turned out of the Pots, with all the Earth preſerved to their Roots, and planted in the Places where they are to remain (for they are bad Plants to remove when grown old), obſerving to give them now and then a little Water, until they have taken freſh Root; after which they will require no farther Care than to train them upright in the Manner you would have them grow; but thoſe Plants which were at firſt planted into a Border in the open Ground, ſhould be arched over, and covered with Mats in froſty Weather, during the firſt Winter; but may be tranſplanted abroad the ſucceeding Spring. In removing theſe Plants, you ſhould be careful to preſerve as much Earth about the Roots as you can; and if the Seaſon ſhould prove hot and dry, water and ſhade them, until they have taken freſh Root, after which they will require no other Culture than was before directed.

Theſe Plants may alſo be propagated by Cuttings planted in *May* or *June*, upon a Bed of light Earth, keeping them ſhaded with Mats, and frequently refreſhed with Water, until they have taken Root, which will be in about two Months, when you may tranſplant them into Pots filled with good freſh light Earth, which ſhould be ſet in a ſhady Place until they have taken Root, and then may be expoſed to the open Sun until *October*, when you ſhould remove them into Shelter the firſt Winter; but the ſucceeding Spring you may plant them abroad, as directed for the Seedling Plants.

The 14th and 15th Sorts are by much the moſt beautiful of all theſe *Ciſtus*'s; the Flowers, which are as big as a large Roſe, are of a fine white, with a deep purple Spot on the Bottom of each Leaf. Theſe Plants abound with a ſweet glutinous Liquor, which exudes through the Pores of the Leaves in ſo plentiful a Manner, in hot Weather, that the Surfaces of the Leaves are covered therewith; from this Plant *Cluſius* thinks might be gathered great Quantities of the Labdanum which is uſed in Medicine, in the Woods in *Spain*, where he ſaw vaſt Quantities of this Shrub growing.

But it is from the 9th Sort, which Monſ. *Tournefort* ſays, the *Greeks*, in the *Archipelago*, gather this ſweet Gum; in the doing of which (*Bellonius* ſays) they make uſe of an Inſtrument like a Rake without Teeth, which they call *Ergaſtiri*; to this are tied many thongs of raw and untanned Leather, which they rub gently on the Buſhes that produce the Labdanum, that ſo that liquid Moiſture may ſtick upon the Thongs; after which they ſcrape it off with Knives; this is done in the hotteſt Time of the Day, for which Reaſon the Labour of gathering this Labdanum is exceſſive, and almoſt intolerable, ſince they are obliged to remain on the Mountains for whole Days together, in the Heat of Summer, or the Dog Days, nor is there any Perſon almoſt that will undertake this Labour, except the *Greek* Monks.

Monſ. *Tournefort* alſo relates the ſame in his Travels, where he ſays, that the Shrubs which produce the Labdanum grow upon dry ſandy Hillocks; and that he obſerved ſeveral Country Fellows in their Shirts and Drawers, that were bruſhing the Shrubs with their Whips; the Straps whereof, by being drawn over the Leaves of the Plant, licked up a Sort of odoriferous Balſam ſticking upon the Leaves, which he ſuppoſes to be Part of the nutritious Juice of the Plant, which exudes through the Pores of the Leaves, where it remains like a fattiſh Dew, in ſhining Drops as clear as Turpentine.

When the Whips are ſufficiently laden with this Greaſe, they take a Knife, and ſcrape it clean off the Straps, and make it up into a Maſs of Cakes of different Sizes; this is what comes to us under the Name of Ladanum, or Labdanum. A Man that is diligent, will gather three Pounds two Ounces *per* Day, or more, which they ſell for a Crown on the Spot; this Work is rather unpleaſant than laborious, becauſe it muſt be done in the hotteſt Time of the Day, and in the greateſt Calm; and yet the pureſt Ladanum is not free from Filth, becauſe the Winds of the preceding Days have blown Duſt upon theſe Shrubs, which, by the glewy Subſtance upon the Surfaces of the Leaves, is thereby detained, and mixed therewith. But to add Weight to this Drug, they knead it up with a very fine blackiſh Sand, which is found in thoſe Parts, as if Nature herſelf was minded to teach them how to adulterate this Commodity. It is no eaſy Thing to diſcover this Cheat, when the Sand has been well blended with the Ladanum; in order to which you muſt chew it for ſome Time, to find whether it crackles between the Teeth, and if it doth, you muſt firſt diſſolve it, and then ſtrain it, in order to purify away what has been added to it.

CITHAREXYLON. *Lin. Gen. Plant.* 678. Fiddle Wood.

The *Characters* are,

The Empalement of the Flower is Bell-ſhaped of one Leaf, indented in five Parts. The Flower is of one Leaf, Funnel-ſhaped, and divided at the Top into five equal Parts, which ſpread open. It hath four Stamina which adhere to the Tube, two of them being longer than the other, terminated by oblong Summits with two Lobes. In the Center is ſituated the roundiſh Germen, ſupporting a ſlender Style, crowned by an obtuſe, double-headed Stigma. The Germen becomes a Capſule with two Cells, each having a ſingle Seed.

The *Species* are,

1. Citharexylon *foliis ovato-lanceolatis venoſis, dentatis ternatis, ramis angulatis, floribus racemoſis, ſparſis.* Fiddle Wood with oval Spear-ſhaped Leaves, which are

veined, indented, and placed by Threes, angular Branches, and Flowers growing in looſe Bunches. This is the common Fiddle Wood of *America*.

2. CITHAREXYLON *foliis oblongo-ovatis, integris, oppoſitis, ramis angulatis, floribus ſpicatis.* Fiddle Wood with oblong, oval, entire Leaves growing oppoſite, angular Branches, and Flowers growing in Spikes. This is the *Berberis fructu arbor maxima baccifera, racemoſo, foliis integris obtuſis, flore albo pentapetalo odoratiſſimo, fructu nigro monopyreno.* Fiddle, or Fidelle Wood.

The 1ſt Sort grows common in moſt of the Iſlands in the *Weſt-Indies*, where it riſes to a great Height, and becomes a very large Timber Tree, the Wood of which is greatly eſteemed for Buildings, being very durable.

This riſes with an upright Trunk to the Height of 50 or 60 Feet, ſending out Branches on every Side, which have ſeveral Angles, or Ribs, running longitudinally; theſe are garniſhed by three, oval, Spear-ſhaped Leaves at every Joint, ſtanding in a Triangle, upon ſhort Foot Stalks. The Leaves are about 3 Inches long, and one and a Half broad, of a lively green Colour, pretty much notched on their Edges, having ſeveral deep Veins running from the Mid-rib to the Edges, which are of a pale, or whitiſh Colour on their upper Side, and very prominent on their under. The Flowers come out from the Sides, and alſo at the End of the Branches, in looſe Bunches, which are ſucceeded by ſmall pulpy Berries, incloſing two Seeds in each.

The 2d Sort is a Native of the ſame Iſlands with the 1ſt. This is alſo a very large Tree, whoſe Timber is greatly valued in *America*, for Buildings, being very durable, and from thence I have been informed the *French* gave it the Title of Fidelle Wood, which the *Engliſh* have rendered Fiddle Wood, and ſome have ſuppoſed that the Wood was uſed for making thoſe muſical Inſtruments, which is a great Miſtake.

This Tree riſes with a ſtrong upright Trunk, to the Height of 60 Feet, or more, ſending out many angular Branches, ſtanding oppoſite, which are covered with a looſe whitiſh Bark, and are garniſhed with oval oblong Leaves, ſtanding oppoſite on ſhort Foot Stalks; theſe are of a lucid green, and are rounded at their Ends. The Flowers come out in long looſe Spikes, toward the End of the Branches, which are white, and ſmell very ſweet; theſe are followed by ſmall roundiſh, pulpy Berries, each incloſing a ſingle Seed.

The 1ſt Sort hath been long preſerved in ſome of the curious Gardens in *England*, for the Sake of Variety. The Leaves continuing through the Year, and being of a fine green Colour, make a pretty Variety in the Stove during the Winter Seaſon; this may be propagated either by Seeds, or Cuttings, the latter is the uſual Method in *England*, where the Seeds, are not produced, but when Seeds can be obtained from Abroad, the Plants which riſe from them are much better than thoſe raiſed from Cuttings.

The Seeds of this Sort ſhould be ſown in ſmall Pots early in the Spring, and plunged into a freſh hot Bed of Tanners Bark, and treated as other exotick Seeds, which are brought from hot Countries. If the Seeds are freſh, the Plants will appear in five or ſix Weeks, and in about one Month more, will be fit to tranſplant; when this is done, the Plants ſhould be carefully ſeparated, ſo as not to tear, or break off the Roots, and each planted in a ſmall Pot filled with light freſh Earth, and plunged into the hot Bed again, obſerving to ſhade them till they have taken freſh Root, after which they ſhould have a large Share of Air admitted to them in warm Weather, and muſt be frequently watered; in Autumn the Plants ſhould be removed into the Bark Stove, where it will be proper to keep them the firſt Winter, till they have obtained Strength, then they may be afterward kept in a dry Stove in Winter, and in the Middle of Summer they may be expoſed in the open Air for two Months, in a warm Situation, with which Management the Plants will make better Progreſs than when they are more tenderly treated.

If the Cuttings of this Plant are planted in ſmall Pots during the Summer Months, and plunged into a moderate hot Bed, they will take Root, and may afterward be treated in the ſame Manner as the ſeedling Plants.

The Seeds of the 2d Sort were ſent me by *William Williams*, Eſq; from *Jamaica*, which have ſucceeded in the Phyſick Garden, at *Chelſea*, but the Plants are, as yet, young, ſo that I can give no other Account of them, than what is beforementioned; however they ſeem to be full as hardy as thoſe of the firſt Sort, and make full as great Progreſs. The Leaves of this Sort continue all the Year, and having a gloſſy green Colour, make a pretty Appearance in the Winter Seaſon.

CITRUS. *Lin. Gen. Plant.* 807. *Citreum. Tourn. Inſt. R. H.* The Citron Tree, in *French*, *Citronier*.

The *Characters* are,

The Empalement of the Flower is of one Leaf, indented in five Parts. The Flower hath five, oblong, thick Petals, which ſpread open, and are a little concave; it hath ten Stamina, which are not equal, and join in three Bodies at their Baſe, terminated by oblong Summits. The oval Germen in the Center ſupports a cylindrical Style, crowned by a globular Stigma; the Germen afterward becomes an oblong Fruit, with a thick fleſhy Skin filled with a ſucculent Pulp, having many Cells, each containing two oval hard Seeds.

The *Species* are,

1. CITRUS *fructu oblongo, majori, mucronato, cortice craſſo rugoſo.* Citron with a larger, oblong, pointed Fruit, having a thick rough Rind. This is the *Malum Citreum dulci medullâ. Fer. Heſp.* Sweet Citron.

2. CITRUS *fructu oblongo, cortice tuberoſo rugoſo.* Citron with an oblong Fruit, and a rough knobbed Rind. *Malum Citreum vulgare. Fer. Heſp.* Common Citron.

There are ſeveral other Varieties of this Fruit, with which the *Engliſh* Gardens have been ſupplied from *Genoa*, the great Nurſery of *Europe* for this Sort, as alſo Orange and Lemon Trees; and the Gardeners who cultivate them there, are as fond of introducing a new Variety to their Collection, as the Nurſery Men in *England* are of a new Pear, Apple, Peach, *&c.* ſo that the Varieties being annually increaſed, as are many of our Fruits from Seeds, there is like to be no End of the Variety of theſe, nor of the Orange and Lemon Trees.

The Fruit of the Citron is ſeldom eaten raw, as the Orange, but are generally preſerved, and made into Sweetmeats, which are by ſome Perſons greatly eſteemed; and as theſe are kept till Winter and Spring, when there is a Scarcity of Fruit for furniſhing the Deſert, they are the more valuable; but unleſs the Seaſons are warm, and the Trees well managed, the Fruit rarely ripens in *England*. Some of the faireſt Fruit which I have ſeen growing in *England*, were in the Gardens of his Grace the Duke of *Argyle*, at *Whitton*, where the Trees are trained againſt a South Wall, through which there are Flues contrived for warming the Air in Winter, and Glaſs Covers to put over them when the Weather begins to be cold. In this Place the Fruit were as large, and perfectly ripe, as they are in *Italy* or *Spain*.

The ſeveral Sorts of Citrons are cultivated as the Orange Tree, to which I ſhall refer the Reader, to avoid Repetition; but ſhall only remark, that theſe are ſomewhat tenderer than the Orange, and ſhould have a warmer Situation in Winter, otherwiſe they are very ſubject to caſt their Fruit. They ſhould alſo continue a little longer in the Houſe in Spring, and be carried in again ſooner in Autumn; as alſo have a warmer and better defended Situation in Summer, though not too much expoſed to the Sun in the Heat of the Day.

As their Leaves are larger, and their Shoots ſtronger, than thoſe of the Orange, they require a little more Water in Summer; but in Winter they ſhould have very little Water at each Time, which muſt be oftener repeated. The Soil ought to be much the ſame as for the Orange Tree, but not quite ſo ſtrong.

The common Citron is much the beſt Stock to bud any of the Orange or Lemon Kinds upon, it being the ſtraiteſt and freeſt growing Tree; the Rind is ſmoother, and the Wood leſs knotty, than either the Orange or Lemon, and will take either Sort full as well as its own Kind, which is what none of the other Sorts will do: And theſe Stocks, if rightly managed, will be very ſtrong the ſecond Year after ſowing, capable to receive any Buds, and will have Strength to force them out vigorouſly; whereas it often happens, when theſe Buds are inoculated into weak Stocks, they frequently die, or remain till the ſecond Year before they put out; and thoſe that ſhoot the next Spring after budding, are oftentimes ſo weak as hardly to be fit to remain, being incapable to make a ſtrait handſome Stem, which is the great Beauty of theſe Trees.

CITRUL. *See* Pepo.

CLARY. *See* Horminum, *or* Sclarea.

CLAYTONIA. *Gron. Flor. Virg. Lin. Gen. Pl.* 253.

The *Characters* are,

The Flower hath a two leaved oval Empalement, with a tranſverſe Baſe: It hath five oval Petals which are indented at the Top, and five recurved Stamina, which are ſhorter than the Petals, terminated by oblong Summits; in the Center is ſituated an oval Germen, ſupporting a ſingle Style, crowned by a trifid Stigma: The Germen afterward becomes a roundiſh Capſule having three Cells, opening with three elaſtic Valves, and filled with round Seeds.

We have but one *Species* of this Genus in *England*, *viz.*

CLAYTONIA *foliis linearibus. Lin. Sp. Plant.* Claytonia with narrow Leaves. This is the *Ornithogalo affinis Virginiana, flore purpureo petita petaloide. Pluk.*

This Plant grows naturally in *Virginia*, from whence it was ſent by Mr. *Clayton* to *England*, and received its Title from him.

It hath a ſmall tuberous Root, which ſends out low ſlender Stalks in the Spring, about 3 Inches high, which have each 2 or 3 ſucculent narrow Leaves about two Inches long, of a deep green Colour; at the Top of the Stalk are 4 or 5 Flowers produced, ſtanding in a looſe Bunch; theſe are compoſed of 5 white Petals which ſpread open, and are ſpotted with red on their Inſide; after theſe fall away, the Germen becomes a roundiſh Capſule divided into three Cells, which are filled with roundiſh Seeds. The Flowers appear in *April*, and the Seeds ripen in *June*, ſoon after which the Plant decays to the Root.

It is propagated by Seeds, and alſo from Offsets ſent out from the Roots: The Seeds ſhould be ſown upon a Border of light Earth, ſoon after they are ripe; for if they are kept out of the Ground till Spring, the Plants will not come up till the next Year; whereas thoſe which are ſown early in the Autumn, will grow the following Spring, ſo that a whole Year is gained. When the Plants come up, they will require no other Care but to keep them clean from Weeds; and in the Autumn, if ſome old Tanners Bark is ſpread over the Surface of the Ground, it will ſecure the Roots from being injured by Froſt; which, if it ſhould prove very ſevere, might injure the young Plants, but after the firſt Winter they will not require Protection.

The beſt Time to tranſplant the Roots is about *Michaelmas*, when they are inactive; but as they are ſmall, if great Care is not taken in opening the Ground, the Roots may be buried and loſt; for they are of a dark Colour, and not eaſily diſtinguiſhed from the Ground.

CLAVICLE a Claſper or Tendril.

CLEMATIS. *Lin. Gen. Plant.* 616. *Clematitis. C. B. P.* 300. Virgin's Bower.

The *Characters* are,

The Flowers have no Empalements; they have each four looſe oblong Petals, with a great Number of Stamina, which are ſhorter than the Petals, and the Summits adhere to their Side. They have many Germina, which are roundiſh and compreſſed; the Awl-ſhaped Style, which is longer than the Stamina, is crowned by a ſingle Stigma. The Germina afterward become ſo many roundiſh compreſſed Seeds, with the Style ſitting on their Top, and are collected into a Head, the Styles of the ſeveral Species being of various Forms.

The *Species* are,

1. CLEMATIS *foliis pinnatis, foliolis ovato-lanceolatis, integerrimis, caule erecto. Hort. Cliff.* 225. *Clematis* with winged Leaves, whoſe Lobes are oval, Spear-ſhaped, and entire, and an upright Stalk. This is the *Clematitis ſive flammula ſurrecta alba. J. B.* 2. 127. Upright white Climber.

2. CLEMATIS *foliis ſimplicibus, ovato-lanceolatis. Hort. Cliff.* 225. *Clematis* with ſingle Leaves, which are oval and Spear-ſhaped. This is the *Clematitis cærulea erecta. C. B. P.* 300. Upright blue Climber.

3. CLEMATIS *Hiſpanica ſurrecta altera & humilior flore albicante. H. R. Par.* Another lower, *Spaniſh*, upright Climber, with a whitiſh Flower.

4. CLEMATIS *latifolia integra. J. B.* Climber with broad entire Leaves, commonly called *Viorna*, or Traveller's Joy.

5. CLEMATIS *foliis ternatis, foliolis cordatis, acutis, dentatis, ſcandentibus. Clematis* with trifoliate, Heart-ſhaped, pointed Leaves, which are indented, and climbing

ing. *Clematitis Canadenſis latifolia & triphylla. Sar.* Broad leaved *Canada* Climber, having three Leaves.

6. Clematis *foliis inferioribus, pinnatis, laciniatis, ſummis ſimplicibus, integerrimis, lanceolatis. Hort. Cliff.* 225. *Clematis* whoſe lower Leaves are winged and jagged, and the upper ones ſingle, Spear-ſhaped, and entire. This is the *Clematitis ſive flammula repens. C. B. P.* 300. Creeping Climber.

7. Clematis *cirrhis ſcandens. Hort. Cliff.* 226. *Clematis* with climbing Tendrils. This is the *Clematitis peregrina, foliis pyri inciſis. C. B. P.* 300. Foreign Climber with cut Pear Leaves.

8. Clematis *foliis compoſitis decompoſitiſque, foliolis ovatis, integerrimis. Hort. Cliff.* 225. *Clematis* with compound and decompounded Leaves, whoſe ſmall Leaves are oval and entire. *Clematitis cærulea vel purpurea repens. C. B. P.* Single blue Virgin's Bower.

9. Clematis *foliis ternatis, ternatiſque foliolis, ovatis, acutè ſerratis, ſcandentibus. Clematis* with trifoliate Leaves, which have three oval Lobes, ſharply ſawed, and climbing. This is the *Clematitis Alpina geranii folio. C. B. P. Alpine* Climber with a Crane's Bill Leaf.

10. Clematis *foliis compoſitis decompoſitiſque, foliolis quibuſdam trifidis. Flor. Virg.* 62. *Clematis* with compound and decompounded Leaves, ſome of whoſe Lobes are trifid. This is the *Clematis purpurea repens, petalis florum coriaceis. Raii Hiſt.* 1928. Creeping, purple Climber, with coriaceous Petals to the Flower.

11. Clematis *foliis compoſitis, foliolis inciſis, angulatis, lobatis, cuneiformibus. Lin. Sp. Plant.* 543. *Clematis* with compound Leaves, whoſe ſmall Leaves are angularly cut, and Wedge-ſhaped Lobes. This is the *Clematitis Orientalis folio apii, flore ex viridi flaveſcente, poſteriùs reflexo. Tourn. Cor.* 20. Eaſtern Climber with a Smallage Leaf, and a reflexed greeniſh yellow Flower.

12. Clematis *foliis compoſitis & decompoſitis, foliolis ternatis, ſerratis. Gmel.* Climber with compound and decompounded Leaves, whoſe ſmall Leaves are ſawed and trifoliate.

13. Clematis *foliis ternatis, foliolis ovatis, trinerviis, integerrimis, floribus racemoſis, alaribus, oppoſitis.* Three leaved Climber, with oval, entire Leaves, having three Veins, and Flowers growing in Bunches from the Sides of the Stalk, which are oppoſite. *Clematis foliis ternis. Sloan. Cat.* 84. Three leaved Climber.

14. Clematis *Americana triphylla foliis non dentatis. Houſt. Mſſ.* Three leaved *American* Climber with Leaves not indented.

15. Clematis *foliis ternatis, foliolis acutè dentatis, tomentoſis, quinque nerviis.* Climber with three Leaves, whoſe ſmall Leaves are ſharply indented, woolly, and have five Nerves.

16. Clematis *foliis ſimplicibus, ternatiſque: foliolis integris trilobiſve. Lin. Sp. Plant.* 543. Climber with ſingle and trifoliate Leaves, whoſe ſmall Leaves are either entire, or have three Lobes. This is the *Clematis flore criſpo. Hort. Elth.* 86. Climber with a curled Flower.

The 1ſt Sort grows naturally in the South of *France, Italy, Auſtria,* and ſeveral Parts of *Germany,* but hath been long cultivated in the *Engliſh* Gardens for Ornament. This hath a perennial Root and an annual Stalk, which decays in Autumn, and new ariſe in Spring. The Stalks are upright, about 3 Feet high, garniſhed with winged Leaves ſtanding oppoſite; theſe are compoſed of 3 or 4 Pair of Lobes, terminated by an odd one, which are oval, Spear-ſhaped, and entire; the Flowers are produced in large looſe Panicles, at the Top of the Stalks; theſe are compoſed of 4 white Petals, which ſpread open; and the Middle is occupied by a great Number of Stamina, ſurrounding 5 or 6 Germen, which become ſo many compreſſed Seeds, each having a long Tail or Beard ſitting on the Top. It flowers in *June,* the Seeds ripen in *September.*

The 2d Sort grows naturally in *Hungary* and *Tartary,* but hath been long an Inhabitant of the *Engliſh* Gardens. The Root of this is perennial, ſending up many ſlender upright Stalks, from 3 to 4 Feet high, garniſhed with ſingle Leaves at each Joint, which ſtand oppoſite on very ſhort Foot Stalks; they are near 4 Inches long, and an Inch and Half broad in the Middle, of a bright green, ſmooth, and are entire, ending in a Point: The Flowers come out from the upper Part of the Stalks, ſtanding upon very long naked Foot Stalks, each ſupporting a ſingle blue Flower, compoſed of 4 narrow thick Petals which ſpread open, and many hairy Stamina ſurrounding the Germina in the Center. After the Flowers are paſt, the Germen become ſo many compreſſed Seeds, each having a Tail or Beard. It flowers and ſeeds at the ſame Time with the firſt.

The 3d Sort is very like the firſt, from which it differs in having but 2 or 3 Pair of Lobes in each Leaf, which are narrower and ſtand farther aſunder: The Stalks are ſhorter, and the Flowers larger.

The 4th Sort grows naturally in the Hedges, in *England.* This hath a tough climbing Stalk, ſending out Claſpers, by which it faſtens to the neighbouring Buſhes and Trees, and ſometimes ariſes more than 20 Feet high, ſending out many Side Branches, ſo as often to cover all the Trees and Buſhes of the Hedge. This puts out many Bunches of white Flowers in *June,* which are ſucceeded by ſeveral flat Seeds joined in a Head, each having a long twiſted Tail ſitting on the Top, which is covered with long white Hairs; and in Autumn when the Seeds are near ripe, they appear like Beards, from whence the Country People call it Old Man's Beard. The Branches of this being very tough and flexible, are uſed for tying up Faggots, from whence in ſome Counties, it is called Bindwith.

There are 2 Varieties of this, one with indented Leaves, which is moſt common, and the other entire Leaves; but as theſe are ſuppoſed to ariſe accidentally from Seeds, they are not diſtinguiſhed by later Botaniſts.

The 5th Sort grows naturally all over *North America,* from whence the Seeds have been brought to *Europe.* This is in its firſt Appearance very like the laſt Sort, but the Leaves are broader, and grow by Threes on the ſame foot Stalk, whereas thoſe of the former have 5 or 7 Lobes in each Leaf: The Flowers appear at the ſame Time with the former, but the Seeds do not ripen in *England,* unleſs the Seaſon is very warm. There is little Beauty in this Sort.

The 6th Sort hath a climbing Stalk, like the 4th; the lower Leaves of this are winged, and deeply cut on their Edges, but the upper Leaves are ſingle, Spear-ſhaped, and entire; the Flowers of this Sort are white, and appear in *June* and *July*. This grows naturally in the South of *France*, and in *Italy*.

The 7th Sort grows naturally in *Spain* and *Portugal*. This hath a climbing Stalk, which will riſe to the Height of 8 or 10 Feet, ſending out Branches from every Joint, whereby it becomes a very thick buſhy Plant; the Leaves are ſometimes ſingle, at others double, and frequently trifoliate, being indented on their Edges. Theſe keep their Verdure all the Year; oppoſite to the Leaves come out Claſpers, which faſten themſelves to the neighbouring Shrubs, by which the Branches are ſupported, otherwiſe they would fall to the Ground. The Flowers are produced from the Side of the Branches; theſe are large, of an herbaceous Colour, and appear always about the End of *December*, or Beginning of *January*, which being a Seaſon when few Perſons viſit Gardens, theſe Flowers have eſcaped their Notice, ſo that many have ſuppoſed this Sort doth not produce Flowers in *England*; and the Flowers being nearly the ſame Colour of the Leaves, thoſe who have been more conſtant Viſitors of Gardens, have paſſed by this Plant, without noticing the Flowers; but for many Years together, it hath produced Plenty of Flowers in the Garden at *Chelſea*, and always at the ſame Seaſon.

The 8th Sort is cultivated in the Nurſery Gardens for Sale, and is known by the Title of Virgin's Bower. There are four Varieties of it preſerved in the Gardens of the Curious, and have been by ſome treated as ſo many diſtinct Species; but as their only Differences conſiſt in the Colour of their Flowers, or the Multiplicity of their Petals, they are now only eſteemed as ſeminal Variations; but as they are diſtinguiſhed by the Nurſery Gardeners, ſo I ſhall mention them.

1. Single blue Virgin's Bower.
2. Single purple Virgin's Bower.
3. Single red Virgin's Bower.
4. Double purple Virgin's Bower.

Theſe have no Difference in their Stalks or Leaves, ſo that the ſame Deſcription will fit them all, excepting the Colours or Multiplicity of Petals in their Flowers.

The Stalks of theſe Plants are very ſlender and weak, having many Joints from whence come out Side Branches, which are again divided into ſmaller: If theſe are ſupported, they will riſe to the Height of 8 or 10 Feet, and are garniſhed with compound winged Leaves placed oppoſite at each Joint. Theſe branch out into many Diviſions, each of which hath a ſlender Foot Stalk, with 3 ſmall Leaves which are oval and entire; from the ſame Joint, generally four Foot Stalks ariſe, two on each Side; the two lower have three of theſe Diviſions, ſo that they are each compoſed of nine ſmall Leaves; but the two upper have only two oppoſite Leaves on each, and between theſe ariſe three ſlender Foot Stalks, each ſupporting one Flower. The Flowers have each four Petals, which are narrow at their Baſe, but are broad at the Top and rounded: In one they are of a dark worn-out purple, in another blue, and the third of a bright purple or red Colour. The double Sort, which is common in the *Engliſh* Gardens, is of the worn-out purple Colour: But the foreign Catalogues mention double Flowers of both the other Colours. The double Flowers have no Stamina or Germen, but in lieu of them, there is a Multiplicity of Petals, which are narrow, and turn inward at the Top.

Theſe Plants grow naturally in the Woods, in *Spain* and *Portugal*, but have been long cultivated in the *Engliſh* Gardens for Ornament. They flower in *June* and *July*, but ſeldom ripen Seeds in *England*.

The 9th Sort grows naturally on the *Alps*, and other Mountains in *Italy*. I received it from Mount *Baldus*, where it is in Plenty. This hath a ſlender climbing Stalk, which riſes 3 or 4 Feet high, ſupporting itſelf by faſtening to the neighbouring Plants or Shrubs. The Leaves are compoſed of nine Lobes or ſmall Leaves, three ſtanding upon each Foot Stalk, ſo that it is what the former Writers ſtile a nine leaved Plant. The Flowers come out at the Joints of the Stalk, as the common Travellers Joy, which are white, ſo make no great Appearance. This Sort flowers in *May*.

The 10th Sort grow naturally in *Virginia* and *Carolina*, from whence I received the Seeds; this hath many ſlender Stalks, garniſhed with compound winged Leaves at each Joint; theſe are generally compoſed of nine Leaves, ſtanding by Threes, like thoſe of the 8th Sort, but the ſmall Leaves of this are nearly of a Heart-ſhape. The Flowers ſtand upon ſhort Foot Stalks, which come out from the Wings of the Leaves, one on each Side the Stalk. The Flowers are compoſed of 4 thick Petals, which are purple on their Outſide, and blue within. They appear in *July*, and if the Autumn proves warm, the Seeds will ripen in *September*.

The 11th Sort was diſcovered by Dr. *Tournefort* in the *Levant*, from whence he ſent the Seeds to the Royal Garden at *Paris*, where they ſucceeded, and perfected Seeds, ſo that moſt of the Gardens in *Europe* have been furniſhed with Seeds from thence; this hath weak climbing Stalks, which faſten themſelves by their Claſpers, to any Plants, which ſtand near them, and thereby riſe to the Height of 7 or 8 Feet; theſe are garniſhed with compound winged Leaves, conſiſting of nine ſmall Leaves (or Lobes) which are angular, and ſharp-pointed. The Flowers come out from the Wings of the Leaves, which are of a yellowiſh green, and the Petals are reflexed backward; theſe come out in *April* and *May*, and in warm Seaſons the Seeds will ripen very well, if the Plants have a good Situation.

The 12th Sort grows naturally in *Tartary*, from whence the Seeds were ſent to the Imperial Garden at *Peterſburgh*, where it ſucceeded and hath produced Seeds, Part of which were ſent me in the Year 1753: Theſe grew, and the Plants have flowered the two laſt years in the *Chelſea* Garden. This Plant hath weak climbing Stalks which require Support, theſe grow near 4 Feet high; the Joints are far aſunder, at each of theſe come two compound winged Leaves, whoſe ſmall Leaves are placed by Threes; theſe are deeply ſawed on their Edges and terminate in ſharp Points. The Flowers come out from the Wings of the Leaves ſingle, ſtanding upon long naked Foot Stalks, and are compoſed of 4 narrow Spear-ſhaped Petals, which ſpread open in form of a Croſs; they are of a yellowiſh white Colour. In the Center is ſeveral Germen, ſurrounded by a great Number of Stamina with flat compreſſed Summits, of the ſame Colour with the Petals of the Flower; after theſe are paſt, the Germen become ſo many compreſſed Seeds, each having a bearded Tail. It flowers in *May*, and the Seeds ripen in *Auguſt*.

The 13th Sort was ſent me from *Jamaica*. This hath ſlender climbing Stalks which faſten themſelves to the Trees and Shrubs which ſtand near them, and thereby riſe to the Height of 10 or 12 Feet: Theſe are garniſhed by trifoliate Leaves, coming out on each Side the Stalk oppoſite, the Lobes are large, oval, and entire, having three longitudinal Veins. The Foot Stalks of the Flowers ariſe at the ſame Joints, cloſe to thoſe of the Leaves, one on each Side oppoſite: Theſe are long, naked, and grow horizontally, extending beyond the Leaves before they divide or branch out; then there comes out 3 or 4 Pair of ſmall Foot Stalks from the the large one, each of which divides again into three ſmaller, each ſupporting a ſingle Flower: The lower Pair of theſe are extended 4 or 5 Inches, the other gradually diminiſh to the Top, ſo that they form a pyramidal Thyrſe of Flowers: Theſe are white, and are compoſed of 4 narrow Petals which are reflexed back, but the Stamina all ſtand erect.

The 14th Sort was ſent me from *Campeachy*. This hath ſtrong climbing Stalks, which faſten themſelves by their Claſpers to the neighbouring Trees, whereby they are ſupported, and riſe to the Height of 20 Feet or more: Theſe are garniſhed at each Joint by trifoliate Leaves, which are Heart-ſhaped, pointed, and entire. The Flowers come out on long, naked, branching Foot Stalks, which riſe from the Wings of the Leaves. The Flowers are white, and collected into roundiſh Bunches: Theſe are ſucceeded by Seeds ſhaped like thoſe of the common Sort, but have long curling Beards to each, which are finely feathered.

The 15th Sort was ſent me from *La Vera Cruz* by the late Dr. *Houſtoun* in 1730, where he found it growing plentifully in the Sands near the Old Town. This hath ſtrong climbing Stalks, which have Claſpers at each Joint, which faſten themſelves to the Trees near them, whereby they climb to a great Height. Theſe Stalks are garniſhed with trifoliate Leaves placed by Pairs oppoſite at each Joint. The Foot Stalks of theſe are alternately long; for on the ſame Joint, that on one Side is longer than the oppoſite, and ſo they continue alternate the whole Length of the Stalk. The ſmall Leaves or Lobes end in ſharp Points, and are ſharply indented on their Edges: They have five longitudinal Veins, and are covered with a yellowiſh ſoft Down. The Flowers come out from the Wings of the Leaves, ſtanding on ſhort Foot Stalks, and are cloſely connected together: They are white, the Petals reflexed, and the Stamina ſtand erect, as in the former Sort.

The 16th Sort grows naturally in *Carolina*, from whence I received the Seeds in 1726. This hath weak Stalks which riſe near 4 Feet high, and by their Claſpers faſten themſelves to the neighbouring Plants, whereby they are ſupported. The Leaves come out oppoſite at the Joints: Theſe are ſometimes ſingle, at others trifoliate, and ſome of the Leaves are divided into three Lobes. The Flowers come out ſingly from the Side of the Branches upon ſhort Foot Stalks, which have one or two Pair of Leaves below the Flower, which are oblong, and ſharp pointed. The Flowers have four thick Petals, like thoſe of the 10th Sort; theſe are of a purple Colour, and their inner Surface is curled, and hath many longitudinal Furrows. This Sort flowers in *July*, and the Seeds ripen in *September*.

The 3 Sorts firſt enumerated, have perennial Roots, which multiply faſt, but their Stalks die down every Autumn, and new ones ariſe in Spring, in which they differ from all the other Species, therefore require different Management, and are propagated in a different Manner, as follows.

Theſe Plants are propagated either by Seeds, or parting their Roots; but the former being tedious (the Plants ſeldom riſing until the 2d Year after ſowing, and are often two Years more before they flower), the latter is generally practiſed. The beſt Seaſon for parting the Roots is in *October* or *February*; juſt before their Branches decay, or before they riſe again in Spring.

They will grow almoſt in any Soil or Situation; but if the Soil is very dry, they ſhould always be new planted in Autumn, otherwiſe their Flowers will not be ſo ſtrong; but if the Soil be wet, it is better to defer it until Spring. The Roots may be cut through their Crowns with a ſharp Knife, obſerving to preſerve to every Offſet ſome good Buds or Eyes; and then it matters not how ſmall you divide them; for their Roots increaſe very faſt; but if you part them very ſmall, you ſhould let them remain 2 or 3 Years before they are again removed, that the 2d Year their Flowers may be ſtrong, and the Roots multiplied in Eyes, which in one Year cannot be obtained.

Theſe Plants are extreme hardy, enduring the Cold of our ſevereſt Winters in the open Air, and are very proper Ornaments for large Gardens, planted in large Borders, or intermixed with other hardy Flower Roots in Quarters of flowering Shrubs; where, being placed promiſcuouſly in little open Places, they fill up thoſe ſmall Vacancies, and are agreeable enough. They begin to flower about the Beginning of *June*, and often continue to produce freſh Flowers until *September*; which renders them valuable, eſpecially ſince they require very little Care in their Culture; for their Roots may be ſuffered to remain ſeveral Years undiſturbed, if we do not want to part them, which will not in the leaſt prejudice them.

The 4th Sort is found wild in *England* on the Side of Banks, under Hedges, and extends its trailing Branches over the Trees and Shrubs that are near it. It is titled by *Lobel* and *Gerard*, *Viorna*; and by *Dodonæus*, *Vitis alba*: In *Engliſh* it is moſt commonly called Travellers Joy. This Sort is never cultivated in Gardens, being too rambling, and having but little Beauty.

The 5th and 6th Sorts have no more Beauty than the 4th, ſo are ſeldom preſerved in Gardens, unleſs for Variety. They are as hardy, and may be propagated by Seeds or laying down their Branches.

The 7th Sort retains its Leaves all the Year, which renders it valuable. This was formerly preſerved in Green-houſes in Winter, ſuppoſing it too tender to live in the open Air; but now it is planted in the full Ground, where the Plants thrive much better than in Pots, and produce Plenty of Flowers, which they never did when they were more tenderly treated: Nor have I found that the Plants have ſuffered from ſevere Froſts; for theſe which have been growing in the open Air of *Chelſea*, more than 20 Years, have reſiſted the greateſt Cold without covering.

This Sort doth not produce Seeds in *England*, ſo it is propagated by Layers, and Cuttings. If they are propagated by Layers, it muſt be done in the Beginning of *October*, when the Shoots of the ſame Year only, ſhould be choſen for this Purpoſe, for the older Branches do not put out Roots in leſs than two Years, whereas the tender Shoots will make good Roots in one Year: Theſe muſt be pegged down into the Ground as is uſually practiſed for other Layers, to prevent their riſing. If the Shoots have two Inches of Earth over them, it will be better than a greater Depth; but then, a little old Tanners Bark ſhould be ſpread over the Surface of of the Ground, to keep out the Froſt; for as the Plants generally begin flowering about *Chriſtmas*, ſo at the ſame time they are putting out Roots, which being but juſt formed, may be injured by ſevere Froſts: Theſe Layers will have ſtrong Roots by the following Autumn, when they may be taken from the old Plant, and tranſplanted where they are deſigned to remain.

When they are propagated by Cuttings, they ſhould be planted in *March*, in Pots filled with good Kitchen Garden Earth, and plunged into a moderate hot Bed, obſerving to ſhade them from the Sun in the Day-time, and gently water them 2 or 3 times a Week, and in leſs than two Months they will have taken Root, when they ſhould be gradually inured to the open Air: The following Summer they may be placed in any Part of the Garden till *Michaelmas*; and then they ſhould be turned out of the Pots and planted in the full Ground, either where they are deſigned to remain, or into a Nurſery Bed, to grow a Year longer to get Strength, before they are placed out for good.

All the Varieties of Virgin's Bower, are propagated by laying down their Branches; for although the ſingle Flowers do ſometimes produce Seeds in *England*, yet as theſe Seeds, when ſown, remain a whole Year in the Ground before they vegetate, the other being the more expeditious Method of increaſing theſe Plants, is generally practiſed: But in order to ſucceed, theſe Layers ſhould be put down at a different Seaſon, from the former Sort; for when they are layed in Autumn, their Shoots are become tough, ſo do rarely put out Roots under two Years, and after lying ſo long in the Ground, not one in three of them will have made good Roots; ſo that many have ſuppoſed the Plants were difficult to propagate, but ſince they have altered their Seaſon of doing it, they have found the Layers have ſucceeded as well as thoſe of other Plants.

The beſt Time for laying down the Branches is in *July*, ſoon after they have made their firſt Shoots, for the young Branches of the ſame Year, freely take Root; but as theſe are very tender, there ſhould be great Care taken not to break them in the Operation: Therefore thoſe Branches from which theſe Shoots were produced, ſhould be brought down to the Ground, and faſtened to prevent their riſing; then the young Shoots ſhould be layed into the Earth, with their Tops raiſed upright, 3 or 4 Inches above Ground, and after the Layers placed down, if the Surface of the Ground is covered with Moſs, rotten Tanners Bark or other decayed Mulch, it will prevent the Earth from drying, ſo that the Layers will not require watering above 3 or 4 Times, which ſhould not be at leſs than 5 or 6 Days Interval; for when theſe Layers have too much Wet, the tender Shoots frequently rot, or when the young Fibres are newly put out, they are ſo tender, as to periſh by much Wet: Where the Method here directed is practiſed, the Layers will more certainly take Root, than any other.

As theſe Plants have all of them climbing Branches, they ſhould be always planted where they may be ſupported, otherwiſe the Branches will fall to the Ground and appear unſightly; ſo that unleſs properly diſpoſed, inſtead of being Ornaments to a Garden, they will become the reverſe. Where there are Arbours or Seats with Trellis Work round them, theſe Plants are very proper to train againſt it; or where any Walls or other Fences require to be covered from the Sight, theſe Plants are very proper for the Purpoſe; but they are by no means proper for open Borders, nor do they anſwer the Expectation when intermixed with Shrubs; for unleſs their Branches have room to extend, they will not produce many Flowers.

The Sort with double Flowers is the moſt beautiful, and ſhould be preferred to the ſingle, of which a few only ſhould be planted for Variety. They are all equally hardy, ſo are ſeldom injured by Froſt, excepting in very ſevere Winters, when ſometimes the very tender Shoots are killed, but if theſe are cut off in Spring, the Stems will put out new Shoots.

The 10th, 11th, and 16th Sorts are alſo very hardy Plants, and have climbing Branches, ſo may be diſpoſed in the ſame Manner as the other: They are alſo propagated by Layers, which will ſucceed, if performed at the ſame time, and Manner as directed for them.

The other Sorts are Natives of the warmeſt Parts of *America*, ſo will not thrive in this Country, unleſs preſerved in Stoves; but as theſe are great Ramblers and Plants of no great Beauty, they are ſeldom preſerved in *Europe* but in Botanick Gardens for Variety. Theſe may be propagated by Layers as the other Sorts; or may be raiſed from Seeds obtained from the Countries where they naturally grow; but theſe muſt be treated as other exoticks from the ſame Country.

CLEOME. *Lin. Gen. Plant.* 740. *Sinapiſtrum. Tourn. Inſt. R. H.* 231. *Tab.* 116.

The *Characters* are,

The Flower hath a four leaved Empalement which ſpreads open: It hath four Petals which are inclined upward and ſpread open, the lower being leſs than the other; in the Bottom there are three mellous Glands which are roundiſh, and are ſeparated by the Empalement. It hath ſix or more Stamina which are incurved, having riſing Summits fixed to their Side: It hath a ſingle Style ſupporting an oblong Germen, of the ſame Length of the Stamina, and crowned by a thick Stigma. The Germen afterward becomes a long cylindrical Pod ſitting upon the Style, having one Cell opening with two Valves, and filled with roundiſh Seeds.

The *Species* are,

1. CLEOME *floribus gynandris, foliis digitatis. Hort. Cliff.* 341. *Cleome* with Flowers having male and female Parts, and fingered Leaves. This is the *Sinapiſtrum Indicum, pentaphyllum flore carneo, minus, non ſpinoſum.*

noſum. H. L. Five leaved ſmaller *Indian* Baſtard Muſtard, with a Fleſh coloured Flower and no Spines.

2. Cleome *floribus hexandres, foliis ternatis; foliolis lanceolatis. Lin. Sp. Plant.* 672. *Cleome* with Flowers having ſix Stamina, trifoliate Leaves, and Spear-ſhaped Lobes. This is the *Sinapiſtrum Orientale, triphyllum, ornithopodii ſiliquis, Tourn.* Eaſtern Baſtard Muſtard, with 3 Leaves, and Pods like Birds-foot Trefoil.

3. Cleome *floribus hexandris, foliis ternatis, foliolis lineari-lanceolatis, ſiliquis bivalvibus. Cleome* with Flowers having ſix Stamina, trifoliate Leaves, narrow Spear-ſhaped Lobes, and Pods having two Valves. This is the *Sinapiſtrum Luſitanicum triphyllum, flore rubro. Tourn. Inſt. R. H.* 231. Three leaved *Portugal* Baſtard Muſtard with red Flower.

4. Cleome *floribus dodecandris, foliis quinatis ternatiſque Flor. Zeyl.* 241. *Cleome* with Flowers having 12 Stamina, trifoliate and quinquefoliate Leaves. This is the *Sinapiſtrum Zeylanicum, triphyllon & pentaphyllon viſcoſum, flavo Mart. Dec.* 3. Viſcous Baſtard Muſtard of *Ceylon* with 3, and five Leaves, and a yellow Flower.

5. Cleome *floribus hexandris, foliis ternatis, foliolo intermedio majori. Cleome* with Flowers having ſix Stamina, and trifoliate Leaves, whoſe middle Lobe is the largeſt. This is the *Sinapiſtrum Indicum triphyllum, flore carneo non Spinoſum. Indian* 3 leaved Baſtard Muſtard, without Spines, and a Fleſh coloured Flower.

6. Cleome *floribus hexandris, foliis ſeptenis, caule ſpinoſo, ſiliquis pendulis. Cleome* with Flowers having ſix Stamina, Leaves with ſeven Lobes, a prickly Stalk, and hanging Pods. This is the *Sinapiſtrum Ægyptiacum heptaphyllum, flore carneo, majus, ſpinoſum. H. L.* Greater prickly, *Egyptian* Muſtard, with ſeven Leaves, and a Fleſh-coloured Flower.

7. Cleome *floribus hexandris, foliis quinatis ternatiſque, caule ſpinoſo. Cleome* with Flowers, having ſix Stamina, Leaves compoſed of five and three Lobes, and a prickly Stalk. This is the *Sinapriſtrum Indicum ſpinoſum, flore carneo, folio trifido vel quinquefido. Houſt. Mſſ.* Prickly *Indian* Baſtard Muſtard, with a Fleſh coloured Flower, and Leaves divided into three or five Lobes.

8. Cleome *floribus hexandris, foliis ſimplicibus, ovato lanceolatis Flor. Zeyl.* 243. *Cleome* with ſix Stamina to the Flowers, and ſingle Leaves, which are ovally Spear-ſhaped. This is the *Sinapiſtrum Zeylanicum viſcoſum, folio ſolitario, flore flavo, ſiliquâ tenui. Burm. Theſ.* 217. Viſcous Baſtard Muſtard of *Ceylon*, with a ſingle Leaf, a yellow Flower and ſlender Pod.

The 1ſt Sort grows naturally in *Aſia*, *Africa*, and *America*, I received the Seeds of it from *Aleppo*, and the Coaſt of *Guinea*, and in the Earth which came from the *Weſt-Indies* with other Plants; this hath come up as a Weed. It riſes with an herbaceous Stalk about nine Inches high, garniſhed with ſmooth Leaves, compoſed of five ſmall Leaves or Lobes, joining at their Baſe to one Center; and ſpread out like the Fingers of a Hand. The Leaves on the lower Part of the Stalk ſtand upon long Foot Stalks, gradually ſhortened to the Top of the Stalk; where they almoſt join it: The Flowers are produced in looſe Spikes at the End of the Stalks; theſe have four Petals of a Fleſh Colour, which ſtand erect, ſpreading from each other, and below theſe are placed the Stamina and Style which coaleſce at the Bottom, and are ſtretched out beyond the Petals, where they ſpread open; the Germen which ſits upon the Style, becomes a taper Pod, about two Inches long, filled with round Seeds. This is an annual Plant which dies ſoon after the Seeds are ripe.

The 2d Sort grows naturally in the *Levant*, from whence Dr. *Tournefort* ſent the Seeds to the Royal Garden at *Paris*, and from thence moſt of the Botanick Gardens in *Europe* have been furniſhed with it: This riſes with an upright Stalk, about eight Inches high, garniſhed with Leaves compoſed of three Spear-ſhaped Lobes, ſtanding upon ſhort Foot Stalks; the Flowers come out ſingly from the Side of the Stalks, and have four red Petals, which ſtand in the ſame Form as thoſe of the former Sort: Theſe are ſucceeded by ſlender Pods two Inches long, which ſwell in every Diviſion, where each Seed is lodged, ſo as to appear like Joints, as thoſe do of the Bird's-foot Trefoil; when the Seeds are ripe, the whole Plant decays. If the Seeds are ſown in Autumn the Plants will flower in *June*, and their Seeds ripen in *Auguſt*, but thoſe ſown in Spring do not flower till *July*; ſo that unleſs the Seaſon proves favourable, the Seeds will not ripen: If the Seeds of this Sort are permitted to ſcatter, the Plants will come up without Care, and require only to be thinned and kept clean from Weeds; for they will not bear tranſplanting.

The 3d Sort grows naturally in *Portugal* and *Spain*, from whence I received the Seeds. This Sort riſes with an herbaceous Stalk about a Foot high, ſending out a few ſhort Side Branches garniſhed with Leaves compoſed of three narrow Lobes, ſtanding on ſhort Foot Stalks. The Flowers come out ſingly from the Side of the Stalks, of a deep red Colour; and are ſucceeded by thick taper Pods, filled with round Seeds. This is an annual Plant, which will thrive in the open Air, and requires the ſame Treatment as the former.

The 4th Sort grows naturally in the Iſland of *Ceylon*, from whence the Seeds were brought to *Holland*, where they ſucceeded and ſome were ſent me by the late Dr. *Boerhave*; this riſes a Foot and a half high, ſending out ſeveral Side Branches, garniſhed with Leaves, ſome of which have five, and others three roundiſh Lobes ſtanding upon ſhort hairy Foot Stalks of the Leaves, they are of a pale yellow, and are ſucceeded by taper Pods, between two and three Inches long, ending in a Point, and full of round Seeds. The whole Plant ſweats out a viſcous clammy Juice. This is alſo an annual Plant.

The fifth Sort was ſent me from *Jamaica*, in 1730. This is an annual Plant which riſes two Feet high, ſending out many Side Branches garniſhed with Leaves, with one large Spear-ſhaped Lobe in the Middle, and two very ſmall ones on the Side; theſe ſit cloſe to the Branches. The Flowers come out ſingly from the Side of the Branches upon long Foot Stalks: Theſe have four large Fleſh coloured Petals, and ſix long Stamina, which ſtand out beyond the Petals, when the Flowers fade, the Germen which ſits upon the Syle becomes a taper Pod, four Inches long filled with round Seeds.

The 6th Sort was ſent me from *Jamaica*, by the late Dr. *Houſtoun*, who found it growing naturally there in great Plenty. It alſo grows naturally in *Egypt*. This riſes with a ſtrong thick herbaceous Stalk two Feet and a Half high, dividing into many Branches, garniſhed with Leaves compoſed of ſeven long Spear-ſhaped Lobes, joining in a Center at their Baſe, where they ſit upon a long ſlender Foot Stalk: Juſt below the Foot Stalk, comes out one or two ſhort thick yellow Spines which are very ſharp. The Flowers come out ſingly from the Side of the Branches, forming a long looſe Spike at their Extremities; this Spike hath ſingle broad Leaves, which half ſurround the Stalks at their Baſe, from the Boſom of which, come out the Foot Stalks of the Flowers, which are two Inches long, each ſuſtaining a large Fleſh coloured Flower, whoſe Style and Stamina are extended two Inches beyond the Petals. After the Flower is paſt, the Germen which ſits upon the Style, becomes a thick taper Pod five Inches long, which hangs downward, and is filled with round Seeds. This is alſo an annual Plant which periſhes ſoon after the Seeds are ripe.

The 7th Sort was ſent me from the *Havannah* in 1731. This is alſo an annual Plant, which riſes near two Feet high, branching out on every Side: The lower Leaves are compoſed of five oblong Lobes ſtanding upon long Foot Stalks, but thoſe on the Stalks and Branches have three Lobes, and have ſhort Foot Stalks: the main Stalk and alſo the Branches, are terminated by looſe Spikes of purple Flowers, each ſitting upon a ſlender Foot Stalk; at the Baſe of which, is placed a ſingle oval Leaf. The Stalks are armed with ſlender ſtiff Spines ſituated juſt under the Foot Stalks of the Leaves, when the Flowers fade, the Germen becomes a taper Pod, two Inches long, filled with round Seeds.

The 8th Sort grows naturally in *Ceylon*; this is an annual Plant which riſes with an herbaceous Stalk a Foot high, which is garniſhed with long narrow ſingle Leaves, ſtanding alternately on the Stalks; from the Wings of the Leaves come out the Foot Stalks of the Flower, each ſuſtaining a ſingle yellow Flower, which is ſucceeded by a very ſlender taper Pod. All theſe Plants except the 2d and 3d Sorts, are Natives of very warm Countries, ſo will not thrive in *England*, without artificial Heat; therefore their Seeds muſt be ſown upon a good hot Bed in Spring, and when the Plants are fit to remove, they ſhould be planted in ſeparate ſmall Pots, filled with freſh light Earth, and plunged into a freſh hot Bed, obſerving to ſhade them until they have taken freſh Root; after which they ſhould have Air admitted every Day, in Proportion to the Warmth of the Seaſon, and their Waterings ſhould be frequently repeated, but not in too great Plenty; when the Plants have filled theſe ſmall Pots with their Roots, they ſhould be put into larger, and plunged again into a hot Bed, to bring the Plants forward; in *July*, when the Plants are too tall to remain longer in the hot Bed, they ſhould be removed into an airy Glaſs Caſe, where they may be ſcreened from Cold and Wet, but in warm Weather may enjoy the free Air. With this Management the Plants will flower ſoon after, and perfect Seeds in Autumn. The 2d and 3d Sorts may be ſown in the open Borders of the Garden, where they are deſigned to remain; for they do not require any artificial Warmth.

CLETHRA. *Gron. Fl. Virg.* 43. *Lin. Gen. Plant.* 489.

The *Characters* are,

The Flower hath a permanent Empalement of one Leaf, which is cut into five Parts; it hath five oblong Petals, which are longer than the Empalement; it hath ten Stamina as long as the Petals, and terminated by oblong erect Summits; in the Center is ſituated a roundiſh Germen ſupporting a permanent erect Style, crowned by a trifid Stigma. The Germen becomes a roundiſh Capſule incloſed by the Empalement, having three Cells, which are full of angular Seeds.

We know but one Species of this Genus at preſent, viz.

CLETHRA. *Gron. Virg.* 47. There is no *Engliſh* Title to this Plant. It is the *Alnifolia Americana ſerrata, floribus pentapetalis albis in ſpicam diſpoſitis Pluk. Alm.* 18. *American* Shrub with an Alder, ſawed, Leaf, and white, five leaved Flowers, diſpoſed in a Spike.

This Shrub is a Native of *Virginia* and *Carolina*, where it grows in moiſt Places, and near the Sides of Rivulets, riſing to the Height of eight or ten Feet, but in this Country it rarely riſes to half that Height: The Leaves are in Shape like thoſe of the Alder-Tree; but are longer; theſe are placed alternately upon the Branches: The Flowers are produced at the Extremity of the Branches, in cloſe Spikes: They are compoſed of five Leaves, are white, and have ten Stamina in each, which are nearly of the ſame Length with the Petals, this Plant flowers in *July*, and when the Autumns prove favourable, there are often ſome Spikes of Flowers again in *October*.

This is hardy enough to bear the open Air of *England*, and is one of the moſt beautiful Shrubs at the Seaſon of its flowering; which is very little later than in its native Country, being commonly in flower here by the Beginning of *July*, and if the Seaſon is not very hot, there will be part of the Spikes in beauty till the Beginning of *Auguſt*; and as moſt of the Branches are terminated with theſe Spikes of Flowers, ſo when the Shrubs are ſtrong, they make a fine Appearance at that Seaſon.

This Shrub will thrive much better in moiſt, than in dry Ground; and requires a ſheltered Situation, where it may be defended from ſtrong Winds, which frequently break off the Branches, where they are too much expoſed to its Violence. It is propagated by Layers; but they are generally two Years before they get Root, ſo that at preſent, it is very rare in *England*. The fineſt Shrubs of this Kind, which I have yet ſeen, are in the curious Gardens of his Grace the Duke of *Argyll*, at *Whitton*, near *Hounſlow*, where they thrive as well as in their native Country. They may alſo be propagated by Suckers, which are ſent out from their Roots; if theſe are carefully taken off with Fibres in the Autumn, and planted into a Nurſery Bed, they will be ſtrong enough in two Years to tranſplant where they are to remain.

It may alſo be propagated by Seeds, which muſt be procured from the Countries where it grows naturally, for they do not ripen in *England*. But as theſe ſeldom arrive till Spring, ſo when they are ſown at that Seaſon, the Plants will not come up till the following Spring. Therefore the Seeds ſhould be ſown in Pots, and placed in a ſhady Situation till Autumn, then placed under a Frame in Winter; the Plants will come up the next Spring, and in Autumn may be tranſplanted into a Nurſery Bed, to get Strength before they are placed out to remain.

CLIFFORTIA. *Lin. Gen. Plant.* 1004.

The Name was given to this Genus of Plants by Dr. *Linnæus*, in Honour to Mr. *George Clifford* of *Amſterdam*; a great Collector of Plants, and a Patron of Botaniſts, who has printed a Folio Book of the Plants in his Garden, with ſeveral Copper-Plates, exhibiting the Figures of many of the moſt curious Plants. We have no *Engliſh* Name for it.

The *Characters* are,

It hath male and female Flowers in different Plants: the male Flowers have a ſpreading Empalement, compoſed of three ſmall oval concave Leaves. It hath no Petals, but a great number of hairy upright Stamina, the Length of the Empalement, terminated by compreſſed oblong twin Summits. The female Flowers have a permanent Empalement compoſed of three Leaves which are equal, ſitting upon the Germen; theſe have no Petals, but the oblong Germen which is ſituated below the Empalement, ſupports two long ſlender feathered Styles, terminated by a ſingle Stigma; the Germen becomes an oblong taper Capſule, with two Cells crowned by the Empalement, including one narrow taper Seed.

The *Species* are,

1. CLIFFORTIA *folliis ſubcordatis, dentatis, Lin. Sp. Plant.* 1308. *Cliffortia* with Heart-ſhaped, indented Leaves: This is the *Arbuſcula Afr. folio acuto ilicis caulem amplexo rigido, Boer. Ind. African* Shrub, with an acute Ilex Leaf, which is rigid, and embraces the Stalk.

2. CLIFFORTIA *foliis ternatis, intermedio tridentato Prod. Leyd.* 253. Three leaved *Cliffortia*, whoſe middle Leaf is cut in three Parts: This the *Myrica foliis ternatis, intermediis cuneiformibus tridentatis, Hort. Cliff.* 456. *Myrica* with trifoliate Leaves, the middle ones being Wedge-ſhaped, and divided into three Parts.

3. CLIFFORTIA *foliis lanceolatis, integerrimis, Hort. Cliff.* 463. Cliffortia with Spear-ſhaped Leaves which are entire. This is the *Frutex Æthiopicus Conifer, fructu parvo, ſparſim intra folia ruſci, ſeminibus Cylindraceis.* Cone-bearing *Æthiopian* Shrub, with a ſmall Fruit, growing ſcatteringly between Butcher-broom Leaves, and cylindrical Seeds.

The firſt Sort grows naturally at the *Cape of Good-Hope*, but hath been long cultivated in many of the *Engliſh* Gardens, however it was not reduced to any Genus, till Dr. *Linnæus* eſtabliſhed this, and gave it the Title. By ſome former Writers it was called *Camphorata*; to which Genus it had no Relation.

It riſes with a weak ſhrubby Stalk, four or five Feet high, ſending out many diffuſed Branches, which ſpread out on every Side, requiring ſome Support: Theſe are garniſhed with Leaves, which are Heart-ſhaped at their Baſe, but broad at their Ends, where they are ſharply indented. Theſe are very ſtiff, of a grayiſh Colour, and cloſely embrace the Stalks with their Baſe, they are placed alternate on the Branches; and from the Boſom of theſe ariſe a ſingle Flower, ſitting cloſe to the Branch, having no Foot Stalk. Before the Empalement is ſpread open, it forms a Bud, in Shape and Size of thoſe of the *Caper*; this Empalement is compoſed of three green Leaves, which afterwards ſpread open, and then the numerous Stamina appear ſtanding erect; theſe as alſo the inner Surface of the Empalement, are of a yellowiſh green Colour. The Flowers appear in *June, July*, and *Auguſt*, but the Leaves continue in Verdure through the Year.

All the Plants I have ſeen of this Sort, in the *Engliſh* or *Dutch* Gardens, were male, nor have I heard of any female Plants in any of the *European* Gardens.

This Plant is eaſily propagated by Cuttings, which may be planted in any of the Summer Months, if theſe are planted in ſmall Pots filled with light Earth, and plunged into a moderate hot Bed they will ſoon take Root, provided they are ſcreened from the Sun, and duly watered; when they have taken Root, they muſt be gradually inured to bear the open Air, to prevent their drawing up weak: Therefore they ſhould be placed abroad till they have obtained ſome Strength, then they may be each tranſplanted into a ſmall Pot, and placed in the Shade until they have taken freſh Root, after which they may be placed with others of the hardy Kinds of exotick Plants, in a ſheltered Situation till *October*, when they ſhould be removed into the Green-houſe, or placed under a common hot Bed Frame, where they may be ſcreened from the hard Froſt, but enjoy the free Air at all Times when the Weather is mild.

When the Plants advance in Height, their Stems and Branches muſt be ſupported, otherwiſe they will trail on the Ground. In Summer they muſt be placed in the open Air, with Myrtles and other hardy Green-houſe Plants, and in Winter the Plants may be treated in the ſame Manner, but muſt have little Water. This Plant has endured the cold of our ordinary Winters, planted near a South-Weſt Wall without Covering; but in ſevere Winters they are always deſtroyed.

The 2d Sort is a Native of the ſame Country as the firſt, this hath very ſlender ligneous Stalks, which muſt be ſupported; otherwiſe they will fall to the Ground. Theſe ſend out ſlender Branches on every Side, cloſely garniſhed with trifoliate Leaves ſtanding cloſe to the Branches; the middle Lobes of theſe are much larger than the two Side, and are indented in three Parts. The Flowers come out from the Boſom of the Leaves, having very ſhort Foot Stalks, and are ſhaped like thoſe of the 1ſt, but ſmaller; theſe appear in *July* and *Auguſt*. Of this Sort we have only male Plants in the *Engliſh* Gardens, which can only be propagated by Layers; and as theſe are two Years before they take Root, the Plants are at preſent very rare in *England*. This Sort requires the ſame Management as the firſt, and is equally hardy, but muſt not be over watered in Winter. The Leaves continue green all the Year, and being ſingularly ſhaped, they make a Variety in the Green-houſe during the Winter Seaſon.

The 3d Sort riſes with a weak ſhrubby Stalk, about four Feet high, ſending out lateral Branches covered with a whitiſh Bark, and garniſhed with Leaves placed in Cluſters without Order; theſe are ſtiff, of the Conſiſtence and Colour of the Butchers Broom but are narrower, and run out to a longer Point. Between theſe Cluſters of Leaves the Flowers come out in looſe Bunches, theſe have a great Number of yellowiſh Stamina, included in a three leaved Empalement. We have only the male Plant of this Sort, which is very difficult to propagate, ſo is very rare in *Europe* at preſent.

This Plant is tenderer than either of the former Sorts; ſo ſhould be placed in a good warm Green-houſe in Winter, and during that Seaſon, they muſt have but little Water. In the Summer they may be expoſed to the open Air in a ſheltered Situation, but they ſhould not remain abroad too late in the Autumn; for if there ſhould be much Rain at that Seaſon, it would endanger theſe Plants, if they are expoſed to it.

CLINOPODIUM. *Lin. Gen. Plant.* 644. *Tourn. Inſt. R. H.* 194. *Tab.* 92. Field Baſil.

The *Characters* are,

It hath an Involucrum cut into many Parts, and is the Length of the Empalement, upon which the Whorls ſit. The Empalement is of one Leaf, with a cylindrical Tube divided into two Lips; the upper Lip is broad, trifid, acute, and reflexed; the under Lip is cut into two narrow Segments, which turn inward. The Flower is of the Lip Kind, with a ſhort Tube enlarging to the Mouth; the upper Lip is erect, concave, indented at the Top, and obtuſe; the under Lip is trifid and obtuſe, the middle Segment being broad and indented. It hath four Stamina under the upper Lip, two of which are ſhorter than the other, they are terminated by roundiſh Summits; in the Center is ſituated the quadripartite Germen, ſupporting a ſlender Style the Length of the Stamina, crowned by a ſingle compreſſed Stigma. The Germen become four oval Seeds ſhut up in the Empalement.

The *Species* are,

1. CLINOPODIUM *capitulis ſubrotundis, hiſpidis, bracteis ſetaceis. Lin. Sp. Plant.* 587. Field Baſil with roundiſh prickly Heads, and briſtly Bractea. This is the *Clinopodium Origano ſimile, elatius, majore flore. C. B. P.* 225. Common *Engliſh* Field Baſil.

2. CLINOPODIUM *Menthæ folio incanum, & odoratum. Hort. Elth.* 87. Hoary ſweet ſmelling Field Baſil with a Mint Leaf.

3. CLINOPODIUM *rugoſum, capitulis ſcabioſæ. Hort. Elth.* 88. Rough Field Baſil with Heads like the Scabious.

4. CLINOPODIUM *Americanum humile, foliis rugoſioribus. Dale.* Low *American* Field Baſil with rougher Leaves.

5. CLINOPODIUM *Americanum, erectum, non ramoſum foliis longioribus, internodiis longiſſimis. Dale. American* Field Baſil with upright unbranching Stalks, longer Leaves, and the Joints at a very great Diſtance.

6. CLINOPODIUM *Ægyptiacum, vulgari ſimile Dill. Ægyptian* Field Baſil like the common.

The 1ſt Sort grows naturally by the Side of Hedges, and in Thickets, in moſt Parts of *England*; this hath a perennial fibrous Root, which ſends up ſeveral ſtiff ſquare Stalks, a Foot and a Half high, which ſend out a few lateral Branches toward the Top, garniſhed with oval hairy Leaves, placed by Pairs, oppoſite; at the Top of the Stalks the Flowers come out in round Whorls, or Heads; one of theſe terminate the Stalk, and there is generally another which ſurrounds the Stalk at the Joint next below it. The Flowers are ſometimes purple, at others white, for they vary from one Colour to the other, when they are propagated by Seeds, ſo that both Colours are found naturally in the Fields. The Whorls (or Heads) grow very cloſe, and each Foot Stalk ſuſtains ſeveral Flowers, each Flower hath a tubular Empalement, which ends in five ſharp Points, which ſtand erect; at the Baſe of the Empalement ſtand two briſtly Spines, which *Linnæus* terms the Bracteæ; theſe ſtand almoſt horizontal under the Empalement. The Flower is of the labiated, or Lip Kind, according to *Ray*, &c. which is now ſtyled Ringent, or Grining, from the Likeneſs of the upper Part to the Mouth, or Chaps of Animals. The upper Lip is broad and trifid, but the under is cut into 2 narrow Segments; each Flower is ſucceeded by 4 naked Seeds, ſitting at the Bottom of the Empalement. It flowers in *June*.

The 2d Sort grows naturally in *Penſylvania* and *Carolina*, from both theſe Countries I have received the Seeds; this hath a perennial Root, which ſends up many ſquare Stalks about 2 Feet high, which put out a few ſhort Side Branches toward the upper Part; theſe are garniſhed with oblong oval Leaves, about the Size of thoſe of Water Mint, ſtanding by Pairs oppoſite, cloſe to the Stalk; they are hoary, and ſoft to the Touch, and have a ſtrong Odour, between that of Marjoram and Baſil. The upper Surface of the Leaves are of a pale green, but their under Side is hoary and woolly, and they are ſlightly indented on their Edges. The Flowers grow in flat ſmooth Whorls round the Stalks, each Stalk hath generally three of theſe Whorls, the upper which terminates the Stalk being ſmaller, the two other increaſing, ſo that the lower is the greateſt. The Flowers are of a pale purple Colour, and ſhaped like thoſe of the 1ſt Sort, but the Stamina of this ſtand out beyond the Petal, and the Bracteæ at the Baſe of the Empalement are large, Spear-ſhaped, and indented on their Sides. This Plant is called Snake-weed in ſome Parts of *America*, ſuppoſing it a Remedy for the Bite of Rattle Snakes. It flowers in *July* in *England*.

The 3d Sort grows naturally in *Carolina*, from whence the Seeds were ſent me by the late Dr. *Dale*; this hath a perennial Root, which ſends up ſeveral ſquare Stalks, cloſely covered with browniſh Hairs; theſe riſe between 2 and 3 Feet high, they are garniſhed with Leaves, which are very unequal in their Size, thoſe at the Bottom, and alſo toward the Top being above 3 Inches long, and one Inch and a Quarter broad, whereas thoſe in other Parts of the Stalk, are not half ſo large; theſe are rough on their upper Side, hairy below, ſawed on their Edges, and ſtand oppoſite by Pairs: All the lower Part of the Stalk, but immediately below the Foot Stalks of the Flower Heads, there are 3 large Leaves ſtanding round the Stalks; between theſe ariſe 2 ſlender hairy Foot Stalks, about 3 Inches long, one on each Side the Stalk; theſe ſuſtain ſmall Heads of Flowers, ſhaped like thoſe of the Scabious; they are white, ſhaped like thoſe of the other but ſmaller, the Bracteæ immediately under the Empalement, ſpread out like Rays. This Plant flowers in *September* in this Country.

The Seeds of the 4th Sort were ſent me from *Carolina*; this hath ſome Appearance of our common Sort, but the Stalks do not grow more than half ſo high, and divide into many long Side Branches; the Leaves are ſmaller and rougher, and the Whorls of Flowers are produced half the Length of the Branches; whereas the common Sort hath rarely more than two; the Bractea at the Baſe of the Empalement is alſo much longer. This flowers in *June* and *July*, and hath a perennial Root.

The 5th Sort was ſent me from *Carolina*; this hath a perennial Root, which ſends up ſtrait hairy Stalks, which are almoſt round; the Joints of theſe are four or five Inches aſunder, at each of theſe come out two oblong Leaves, hairy on their under Side, ſtanding upon ſhort Foot Stalks; at the Bottom of theſe come out on each Side, a ſlender Branch, Half an Inch long, having two or four ſmall Leaves, ſhaped like the other. The Flowers are produced in ſmall Whorls, ſtanding thinly; theſe are white, and the Bracteæ are longer than the Empalement. This flowers in *Auguſt*.

The 6th Sort is a Native of *Egypt*, from whence the Seeds were ſent to *Europe*, and the Plants have for ſome Years paſt grown in many curious Gardens. It hath a perennial Root, but annual Stalks which grow a Foot and a half high. Theſe are garniſhed with oval Leaves, having many tranſverſe deep Furrows, and are of a dark green Colour, placed oppoſite, at about five or ſix Inches aſunder. There are commonly two or four Side Branches from the main Stems, produced toward the Bottom; and the Whorls of Flowers are produced at every Joint toward the upper Part of the Stalks: Theſe are pretty large and hairy. The Flowers are ſomewhat larger than thoſe of the common Field Baſil, and are of a deeper Colour, ſtretching a little more out of the Empalement. The Leaves of this have at firſt Sight much the ſame Appearance; but when obſerved with Attention, the Difference is ſoon obſerved: But the greateſt conſiſts in the Leaves and Whorls of Flowers being placed at a greater Diſtance, and the Stalks growing ſparſedly in this Species; nor do the Plants continue ſo long as thoſe of the common Sort.

This flowers in *June*, commonly 2 or 3 Weeks before the common *Field Baſil*, and the Seeds ripen in *September*; which, if permitted to ſcatter, the Plants will come up in Autumn; and if the Winter proves favourable, will live in the open Air, provided they grow on a dry Soil; but in moiſt Ground they are frequently deſtroyed, eſpecially when the Plants are young.

This Plant approaches near to the *Clinopodium Orientale Origani folio, flore minimo. Tourn. Corol.* 12. But by comparing this with a Specimen of that Sort from the *Paris* Garden, I find the Leaves of that are ſmoother, and placed much nearer together on the Stalks than thoſe of this Sort, and the Flowers are ſmaller; ſo that it may be deemed a diſtinct Species, as theſe Differences are permanent, and do not alter in any of the Plants which ariſe from the Seeds.

Theſe Plants may be propagated by Seeds, and by parting their Roots, the latter is generally practiſed in *England*, becauſe few of the Sorts perfect Seeds here. The beſt Time to part and tranſplant their Roots is in Autumn; if theſe are planted in a dry Soil, they are all except the third Sort, hardy enough to thrive in the open Air in *England*, and require no Care but to keep them clean from Weeds; every other Year they may be parted and tranſplanted.

The 3d Sort muſt be planted in Pots, and in Winter ſheltered under a Frame, where they may enjoy the free Air in mild Weather, but ſcreened from Froſt.

CLITORIA. *Lin. Gen. Plant.* 796. *Ternatea. Tourn. Act. Reg.* 1706. *Clitorius. Dill. Hort. Elth.* 76. We have no *Engliſh* Title for this Plant.

The *Characters* are,

The Flower hath a permanent Empalement of one Leaf, which is tubular, erect, and indented in five Parts at the Top. The Flower is of the Butterfly Kind, having a large ſpreading Standard, erect and indented at the Top; the two Wings are oblong, obtuſe, and ſhorter than the Standard, which is cloſed. The Keel is ſhorter than the Wings; it is roundiſh and hooked. It hath 10 *Stamina,* 9 *of which are joined, and one ſtands ſeparate, which are terminated by ſingle Summits; in the Center is an oblong Germen, ſupporting a riſing Style, crowned by an obtuſe Stigma. The Germen becomes a long narrow compreſſed Pod, with one Cell, opening with two Valves, incloſing ſeveral Kidney-ſhaped Seeds.*

The *Species* are,

1. CLITORIA *foliis pinnatis. Hort. Cliff.* 360. *Clitoria* with winged Leaves. This is the *Ternatea flore ſimplici cæruleo. Tourn. Ternatea* with a ſingle blue Flower.

2. CLITORIA *foliis ternatis, calycibus campanulatis ſolitariis. Hort. Upſal.* 215. *Clitoria* with trifoliate Leaves, and a ſingle Flower with a Bell-ſhaped Empalement. This is the *Planta leguminoſa Braſiliana, Phaſeoli flore, flore purpureo maximo, Breyn. Cent.* 78. *Tab.* 32. Leguminous Plant of *Braſil* with a Kidney-bean Flower, which is large, and of a purple Colour.

3. CLITORIA *foliis ternatis, calycibus campanulatis geminis. Flor. Virg.* 83. Three leaved *Clitoria* with two Flowers joined, whoſe Empalements are Bell-ſhaped. This is the *Clitorius trifolius flore minore cæruleo. Hort. Elth.* Three leaved *Clitorius* with a ſmaller blue Flower.

4. CLITORIA *foliis ternatis, calycibus cylindricis. Lin. Sp. Plant.* 753. *Clitoria* with trifoliate Leaves, and cylindrical Empalements to the Flowers. This is the *Clitorius Marianus trifolius ſubtus glaucis. Pet. Hort. Sicc.* 243. Three leaved *Clitorius* of *Maryland*, whoſe Leaves are of a Sea green on their under Side.

The 1ſt Sort grows naturally in *India*, the Seeds were firſt brought to *Europe* from *Ternate*, one of the *Molucca* Iſlands, which induced Dr. *Tournefort* to give it the Title of *Ternatea*. There is a Variety of this with white Flowers, and another with large blue Flowers, which make a fine Appearance. The Seeds which I received of the latter, produced Plants with very double Flowers, without the leaſt Variation, but theſe Plants did not produce any Pods here.

This riſes 4 or 5 Feet high, with a twining herbaceous Stalk, like the Kidney-bean, and requires Support; in the Places where it grows naturally, it twiſts about the neighbouring Plants; the Stalks are garniſhed with winged Leaves, compoſed of two or three Pair of Lobes, terminated by an odd one; theſe are of a beautiful green, and placed alternate on the Stalks; from the Appendages of the Leaves, come out the Foot Stalks of the Flowers; each of theſe is encompaſſed by two very fine Leaves about the Middle, where they are bent, ſuſtaining a very large gaping beautiful Flower, whoſe bottom Part ſeems as if growing to the Top.

The Flowers have a green membranaceous Empalement, which is cut into five Parts. The Standard of the Flowers is large, and is ſpread open very wide, and the Flowers are of ſo deep a blue Colour, as to ſtain Paper, after having been many Years dried, almoſt as blue as Indigo; theſe Flowers are ſucceeded by long ſlender Pods, containing ſeveral Kidney-ſhaped Seeds.

The 2d Sort grows naturally in the *Braſils*, from whence the Seeds were brought to *Europe*; this hath a twining Stalk like the former, which riſes 5 or 6 Feet high, and is garniſhed at each Joint with one trifoliate Leaf, ſtanding upon a long Foot Stalk. The Flowers come out ſingly from the Foot Stalk of the Leaves, ſtanding upon pretty long Foot Stalks, which are encompaſſed about the Middle with two ſmall oval Leaves; the Flowers are very large, the Standard being much broader than that of the firſt Sort, and the two Wings are larger; the Flowers are of a fine blue Colour, ſo make a fine Appearance. The Flowers appear in *July*, and in warm Seaſons the Seeds will ripen in Autumn, ſoon after which the Plants decay.

There is one with a double Flower of this Sort, which I raiſed in the *Chelſea* Garden ſome Years paſt, from Seeds ſent me from *India*, but the Plants did not produce Seeds here, and being annual, the Sort was loſt. The Flowers of this were very beautiful.

The Seeds of the 3d Sort were ſent me from the *Bahama* Iſlands; this ſends out from the Root 2 or 3 ſlender twining Stalks, which riſe to the Height of 6 or 7 Feet, and are garniſhed at each Joint with one trifoliate Leaf, whoſe Lobes are oblong, and pointed. At the oppoſite Side of the Stalk, the Foot Stalk of the Flower ariſes, which is little more than an Inch long, naked, and ſuſtains a ſingle Flower, of a purple Colour within, but of a greeniſh white on the Outſide, not half ſo large as either of the former. Theſe Flowers are each ſucceeded by long, ſlender, compreſſed Pods, ending in a Point, which contain one Row of roundiſh Kidney-ſhaped Seeds. This Sort flowers in *July* and *Auguſt*, and the Seeds ripen in Autumn.

The Seeds of the 4th Sort, were ſent me from *Carolina*, where the Plants grow naturally. This riſes with a twining weak Stalk about 5 Feet high, and is garniſhed with trifoliate Leaves like the former, whoſe Lobes are narrower, and of a grayiſh Colour on their under Side; the Flowers come out by Pairs on the Foot Stalks, and their Empalements are cylindrical: The Flowers are ſmall, and of a pale blue Colour within, but of a dirty white on the Outſide. This flowers in *Auguſt*, but rarely ripens any Seeds in *England*.

All theſe Sorts are annual with us in *England*, ſo that unleſs the Seeds ripen, the Species are loſt; as the two Sorts with double Flowers, have not formed any Pods in this Country, ſo far as I have been able to learn; therefore the Seeds of theſe muſt be procured from the Countries where they naturally grow. Indeed theſe are ſuppoſed to be only Varieties, which accidentally ariſe from the ſingle: If this be true, I cannot account for the Succeſs of thoſe Plants which grew at *Chelſea*, for they were all of the ſame double Kind, without the leaſt Variation: And this was not from a ſingle Experiment, but in three different Years when I received the Seeds, the Plants did all of them produce double Flowers.

The Seeds of theſe Plants muſt be ſown upon a good hot Bed early in the Spring, and when the Plants are two Inches high, they ſhould be carefully taken up, and each planted in a ſmall Pot filled with light freſh Earth and plunged into a hot Bed of Tanners Bark, obſerving to ſhade them till they have taken freſh Root, and refreſh them with Water as they may require it. After they are well rooted in the Pots, they muſt have Air every Day in Proportion to the Warmth of the Seaſon, to prevent their drawing up weak; their Waterings ſhould be repeated two or three times a Week, a little each time. As theſe Plants have climbing Stalks, they will ſoon grow too tall to remain under common Frames, therefore they muſt then be removed into the Stove, and plunged in the Bark Bed; but if their Roots have filled the Pots, they ſhould be removed into larger; and afterward they muſt be treated as other Plants from the ſame Countries.

CLUSIA. *Lin. Gen. Plant.* 577. *Plum. Nov. Gen.* 23. *Tab.* 20. The Balſam Tree.

The *Characters* are,

The Flower hath a permanent Empalement, compoſed of 5 roundiſh concave Leaves which ſpread open; it hath 5 large roundiſh concave ſpreading Petals. In the Bottom is ſituated a globular Nectarium, including the Germen, which is pervious at Top, from which Place the Stigma ariſes. It hath a great Number of ſingle Stamina, which are ſhorter than the Petals, and terminated by ſingle Summits; the oblong oval Germen is terminated by a plain Star-like Stigma with 6 obtuſe Indentures. The Germen becomes an oval Capſule with 6 Furrows, and 6 Cells, opening with 6 Valves, which ſpread in Form of a Star, including many angular Seeds fixed to a Column, ſurrounded with Pulp.

The *Species* are,

1. CLUSIA *foliis craſis ſubrotundis nitidis, caule arboreo.* *Cluſia* with thick ſhining roundiſh Leaves, and a Tree-like Stalk. This is the *Terebinthus folio ſingulari, non alato, rotundo, ſucculento flore pallidè luteo. Sloan. Hiſt. Jam.* 2. p. 97. Turpentine Tree with a ſingle round ſucculent Leaf, and a paliſh yellow Flower, commonly called Balſam Tree in *America*.

2. CLUSIA *foliis venoſis. Lin. Sp. Plant.* 510. *Cluſia* with veined Leaves. This is the *Cluſia flore roſeo minor, fructu flaveſcente. Plum. Nov. Gen.* 2. Leſſer *Cluſia* with a ſmaller Roſe Flower, and a yellowiſh Fruit.

There are two or three Varieties of the firſt Sort, which differ in the Size and Colour of their Flowers and Fruit; one hath a white Flower and ſcarlet Fruit, another hath a Roſe Flower and a greeniſh Fruit; and a third hath a yellow Fruit: But theſe are ſuppoſed to be only ſeminal Variations; though *Plumier* has enumerated them as diſtinct Species, but as the Plants have not flowered in *England*, I can give no particular Account of their Difference, the ſingular Beauty of the Leaves, renders it worthy of a Place in every Collection of rare Plants.

The 1ſt Sort is pretty common in the *Britiſh* Iſlands of *America*, where the Trees grow to the Height of 20 Feet, and ſhoot out many Branches on every Side, furniſhed with thick round ſucculent Leaves placed oppoſite by Pairs. The Flowers are produced at the Ends of the Branches, each having a thick ſucculent Cover: Theſe Flowers are of different Colours in different Plants, ſome being red, others yellow, ſome white, and ſome green: After the Flowers are paſt, they are ſucceeded by oval Fruit, which are alſo of different Colours in different Plants: From every Part of theſe Trees there exudes a Sort of Turpentine, which is called in the *Weſt Indies* Hog-gum; becauſe they ſay, that, when any of the wild Hogs are wounded they repair to theſe Trees, and rub their wounded Parts againſt the Stems, till they have anointed themſelves with this Turpentine, which heals their Wounds: The Turpentine of theſe Trees is greatly recommended for the Cure of Sciaticas, by ſpreading it on a Cloth, and applying it as a Plaſter to the Part affected.

Theſe Plants are at preſent very rare in *Europe*: There were ſome Years ago ſome fine Plants in the Garden of Mr. *Parker*, near *Croydon* in *Surry*; theſe were brought over growing in Tubs of Earth from *Barbadoes*, which is the beſt Method of procuring them; for the Seeds ſeldom ſucceed; and the young Plants grow ſo ſlowly, as not to make any Figure in ſome Years; in bringing over the

Plants, great Care ſhould be had, that they do not receive much Wet; for as they have very ſucculent Stems, Moiſture will cauſe them to rot.

As theſe Plants are tender; ſo they muſt be conſtantly kept in the Stove, otherwiſe they will not live through the Winter in *England*; they muſt alſo be watered very ſparingly, eſpecially in Winter; for theſe Plants naturally grow in thoſe Parts of the Iſlands, where it ſeldom rains; therefore they cannot bear much Moiſture.

They may be propagated by Cuttings, which muſt be laid to dry after they are cut from the Plants for ten Days or a Fortnight, that the wounded Part may be healed over, otherwiſe they will rot: When the Cuttings are planted, the Pots ſhould be plunged into a hot Bed of Tanners Bark, and now and then gently refreſhed with Water: The beſt Time for planting theſe Cuttings is in *July*, that they may be well rooted before the cold Weather comes on in Autumn. In Winter they may be placed on Stands in the dry Stove; but if in Summer they are plunged into the Tan-Bed, they will make great Progreſs, and their Leaves will be large, in which conſiſts their greateſt Beauty.

The 2d Sort was diſcovered growing naturally at *Campeachy*, from whence I received ſome dried Samples and Seeds: This hath very large oval Spear-ſhaped Leaves ending in Points, placed alternate on the Branches, and have ſeveral Ribs, which go off from the Mid-rib alternate, riſing upward to the Sides of the Leaves; and alſo a great Number of ſmall Veins running horizontally between theſe Ribs. The Borders of the Leaves are ſawed, and their under Sides of a ſhining brown Colour. The Branches are covered with a woolly Down, and the Flowers are produced in looſe Spikes at the End of the Shoots; theſe are ſmaller than thoſe of the former Sort, and are of a Roſe Colour. This Tree riſes to the Height of 20 Feet; it is propagated by Seeds which muſt be obtained from the Countries where the Trees naturally grow, for there can be little Hopes of obtaining any of the Seeds in *Europe*. The Plants are tender, ſo muſt be placed in the Tan Bed of the Bark Stove, otherwiſe they will not thrive in this Country; and they muſt be treated as is directed for other tender Plants from the ſame Countries.

CLUTIA. This Genus of Plants was conſtituted by the learned Dr. *Boerhaave*, in Honour of *Augerius Clute*, a curious Botaniſt.

The *Characters* are,

It is male and female in different Plants. The male Flowers have a large ſpreading Empalement, compoſed of 5 *oval concave Leaves, they have* 5 *Heart-ſhaped Petals which are ſhorter than the Empalement and ſpread open. They have* 5 *exterior Nectariums ſituated in a Circle at the Bottom of the Petals; and* 5 *interior which are ſituated within the other, and have ſmall Apices with a mellous Liquor. They have* 5 *Stamina ſituated in the Middle of the Style, which ſpread horizontally and are terminated by roundiſh Summits: Theſe have no Germen, but a long truncated Style in the Middle of the Stamina. The female Flowers have permanent Empalements, and Petals like thoſe of the male, theſe have* 5 *double exterior Nectariums, but no interior, they have a roundiſh Germen ſupporting three bifid reflexed Styles, the Length of the Petals, crowned by obtuſe Stigmas; the Germen becomes a globular Capſule with ſix Furrows, and three Cells, each containing a ſingle Seed.*

The *Species* are,

1. CLUTIA *foliis ſeſſilibus lanceolatis Hort. Cliff.* 500. *Clutia* with Spear-ſhaped Leaves ſitting cloſe to the Stalks. This is the *Alaternoides Africana telephii legitimi imperati foliis Hort. Amſt.* 2. p. 2. *African* Baſtard *Alaternus* with Leaves like the true *Orpine* of *Imperatus*.

2. CLUTIA *foliis ovatis integerrimis, floribus lateralibus. Lin. Sp. Plant.* 1042. *Clutia* with oval entire Leaves, and Flowers growing from the Sides of the Branches. This is the *Frutex Æthiopicus, portulacæ folio, flore ex albo vireſcente. Hort. Amſt.* 1. p. 177. *Ethiopian* Shrub with a Purſlain Leaf and a greeniſh Flower inclining to white.

3 CLUTIA *foliis cordato lanceolatis. Flor. Zeyl. Clutia* with Heart-formed Spear-ſhaped Leaves. This is the *Ricinus dulcis arboreſcens Americanus, populneâ fronde argenteâ. Pluk. Alm.* 321. Sweet Tree like *American Ricinus* with ſilvery Poplar Leaves.

4. CLUTIA *foliis lanceolatis acutis integerrimis petiolatis. Lin. Sp. Plant.* 1042. *Clutia* with entire Spear-ſhaped pointed Leaves having Foot Stalks. This is the *Ricinoides Æleagni folio Cateſb. Car. Vol.* 2. p. 36. Baſtard *Ricinus* with a wild Olive Leaf.

The two firſt Sorts are Natives of *Africa*, from whence they were brought to ſome curious Gardens in *Holland*, and have ſince been communicated to moſt of the Botanick Gardens in *Europe*. The firſt Sort with female Flowers has been long an Inhabitant of ſome curious Gardens in *England*; but that with male Flowers I have lately received, with many other rare Plants, from Dr. *Job Baſter*, F. R. S. of *Zirkzee* in *Holland*.

The ſecond Sort has alſo been ſome Years in the *Engliſh* Gardens, and was ranged in the Genus of *Alaternoides*, under which Title it has been well figured by Dr. *Commelin* in the *Hortus Amſtelodamenſis*; but we have not the two Sorts of this in *England* at preſent. As far as I have been able to learn, that which is in the *Engliſh* Gardens is the female.

The 1ſt Sort riſes with a ſhrubby Stalk 6 or 8 Feet high, putting out many Side Branches which grow erect, theſe are garniſhed with ſmall Spear-ſhaped Leaves, placed alternate, ſitting cloſe to the Branches: They are of a grayiſh Colour and entire. The Flowers come out from the Joints, at the ſetting on of the Leaves; toward the upper Part of the Branches theſe are ſmall and of a greeniſh white; they appear in *June*, *July*, and *Auguſt*, but being ſmall make no great Appearance.

The 2d Sort riſes about the ſame Height with the 1ſt, but hath a ſtronger Stem, the Branches are garniſhed with oval Leaves, which are much larger than thoſe of the 1ſt Sort and they ſtand upon Foot Stalks which are an Inch long, theſe are of a Sea-green, and entire, the Flowers are like thoſe of the 1ſt Sort in Shape and Colour; but thoſe on the male Plants are ſmaller, and grow cloſer together than thoſe of the female; but both are ſuſtained upon ſhort Foot Stalks. Theſe Flowers appear at the ſame Time as thoſe of the 1ſt Sort, and the Seeds ripen in Autumn. I have raiſed ſeveral of theſe Plants from Seeds, which have all proved female, the ſame as the parent Plant.

Theſe Plants are eaſily propagated by Cuttings during any of the Summer Months: If the Cuttings are planted in ſmall Pots, and plunged into a very moderate hot Bed, and ſhaded from the Heat of the Sun in the Middle of the

Day, they will ſoon take Root, and ſhould then be inured to the open Air, otherwiſe they will draw up very weak: And afterward theſe Plants may be each put into a ſeparate ſmall Pot, and placed in a ſheltered Situation, where they may remain until the Middle of *October*, or later, if the Weather continues mild, when they ſhould be removed into the Green-houſe, and placed where they may have the free Air in mild Weather; for they only require to be protected from Froſt, therefore require no Warmth in Winter; but if the Green-houſe is ſhut up too cloſe, or the Plants are much ſhaded by others, the tender Shoots are ſubject to grow mouldy, which deſtroys more of theſe Plants than the Cold: In Summer they muſt be placed abroad, in a ſheltered Situation, with other hardy exotick Plants.

As theſe Plants are always green, they look well in the Green-houſe during the Winter-Seaſon, and in Summer when they are placed in the open Air, with other exotick Plants, they make a pretty Variety.

The 3d Sort grows naturally in *India*. This riſes with an upright ſhrubby Stalk, not more than 3 or 4 Feet in *England*; but in the Places where it grows naturally, it riſes upward of 20 Feet high, and ſends out many Branches at the Top, ſo as to form a large ſpreading Head: The Branches are garniſhed with Leaves, ſhaped like thoſe of the black Poplar, which are of a lucid green, and are placed alternate ſtanding upon tender Foot Stalks. As theſe Plants have not yet flowered in *England*, I can give no Account of them, but the Seed Veſſels are very like thoſe of the 2d Sort.

This Plant will live through the Winter in an airy Glaſs Caſe, without artificial Heat, but in that Situation, they ſhould have very little water in winter; for the Plants abound with a milky Juice like the *Euphorbia*, ſo muſt at no Seaſon of the Year have too much Wet. If theſe Plants, when young, are placed in a very moderate Warmth in Winter, it will greatly forward their Growth, but they muſt not have too much Heat, for that will force them too much; and when the Plants have obtained Strength, they may be treated more hardily. This Sort may be propagated by Cuttings during the Summer Seaſon; but the Cuttings ſhould be laid in a dry Place for a few Days, when they are taken from the old Plants; that their wounded Parts may dry and be healed over, before they are planted. Theſe muſt be planted in ſmall Pots, filled with light ſandy Earth, and plunged into a moderate hot Bed of Tanners Bark; and if the Seaſon is very warm, the Glaſſes ſhould be ſhaded in the Heat of the Day, and raiſed up to admit freſh Air to the Cuttings every Day, theſe muſt be very ſparingly watered, for much Wet will cauſe them to rot. When they have taken Root, and begin to ſhoot, they muſt have a greater Share of Air, and by Degrees inured to the open Air; when their Roots have filled the Pots, they ſhould be carefully parted, and each planted in a ſeparate Pot, of the ſame light ſandy Earth; then they ſhould be placed on the back Part of the Stove, behind the other Plants, where they may be ſcreened from the Sun, till they have taken freſh Root, after which they may be brought forward and expoſed gradually to the open Air. In the Summer they ſhould have free Air conſtantly in warm Weather, but they muſt be ſcreened from heavy Rain, and in Winter placed in an airy Glaſs Caſe, where they may enjoy the Sun, and during that Seaſon have very little Wet.

The 4th Sort grows naturally in the *Bahama Iſlands*, and alſo near the *Havanah*, from whence I received the Seeds. This riſes about 12 or 14 Feet high, with ſeveral ſhrubby Stems, which divide into many Branches, garniſhed with narrow pale green Leaves, placed alternate, ſtanding upon pretty long Foot Stalks; the Flowers come out in long looſe Spikes from the Side of the Branches, theſe are white, with yellow Summits, and are ſucceeded by ſmall round Capſules, having 3 Cells, in each of which is lodged a ſingle black Seed. The Bark of this Tree, when burned, emits a fine Perfume; and if infuſed in Wine or Water, gives either a fine aromatick Bitter. This Plant may be propagated as the former, but requires a Stove to preſerve it in Winter, and is very impatient of Moiſture, ſo ſhould have very little Water at that Seaſon.

CLYPEOLA. *Lin. Gen. Plant.* 723. *Jonthlaſpi. Tourn. Inſt. R. H. Tab.* 99. Treacle Muſtard.

The *Characters* are,

The Flower hath a permanent Empalement, compoſed of four oblong oval Leaves. It hath four oblong entire Petals, placed in form of a Croſs, and ſix Stamina which are ſhorter than the Petals, two of which ſtanding oppoſite are ſhorter than the other, and are terminated by ſingle Summits; in the Center is ſituated a roundiſh compreſſed Germen ſupporting a ſingle Style, crowned by an obtuſe Stigma. The Germen becomes an orbicular Pod, which is compreſſed, erect, and indented at the Top, with a longitudinal Fiſſure, opening in two Cells, containing round compreſſed Seeds.

The *Species* are,

1. CLYPEOLA *ſiliculis unilocularibus monoſpermis. Hort. Cliff.* 329. *Clypeola* with Pods, having but one Cell and a ſingle Seed. This is the *Jonthlaſpi minimum ſpicatum lunatum. Col. Ecp.* 1. Leaſt Buckler Muſtard with ſpiked Flowers.

2. CLYPEOLA *ſiliculis bilocularibus tetraſpermis. Hort. Cliff.* 329. *Clypeola* with Pods having two Cells and four Seeds. *Thlaſpi Alyſſon dictum campeſtre majus. C. B. P.* 107. Greater Field Treacle Muſtard called *Alyſſon*.

3. CLYPEOLA *annua ſiliculis bilocularibus diſpermis, calycibus perſiſtentibus. Sauv. Monſp.* 71. Annual *Clypeola* with Pods having two Cells and two Seeds, and a permanent Empalement. This is the *Thlaſpi Alyſſon dictum campeſtre minus, C. B. P.* 107. Leſſer Field Treacle Muſtard called *Alyſſon*.

4. CLYPEOLA *perennis, ſiliculis bilocularibus ovatis diſpermis. Sauv. Monſp.* 71. Perennial *Clypeola* with oval Pods having two Cells and two Seeds. This is the *Thlaſpi Alyſſon dictum maritimum. C. B. P.* 107. Maritime Treacle Muſtard called *Alyſſon*.

This Genus was named *Jonthlaſpi* by *Fabius Columna*, and continued by Dr. *Tournefort*, and other Writers on Botany before Dr. *Linnæus*, who has altered the Name to *Clypeola*, the other Name being a Compound.

The 1ſt Sort is a low annual Plant, which ſeldom riſes more than 4 Inches high, the ſlender Branches commonly lie proſtrate on the Ground, which are produced on every Side the Root; theſe are garniſhed with ſmall Leaves, narrow at their Baſe, but are broader at their Ends, where they are obtuſe. The Flowers are produced in ſhort cloſe Spikes at the Extremity of the Branches, which are ſmall, yellow, and compoſed of 4 Leaves placed in form of a Croſs; theſe are ſucceeded by orbicular compreſſed Seed Veſſels, each having one Cell, containing a ſingle Seed. It flowers in *June* and *July*, and the Seeds ripen in Autumn.

The 2d Sort riſes with ſlender ligneous Stalks near 6 Inches high, which grow erect, and are garniſhed with ſmall, oblong, hairy Leaves, placed alternate, ſtanding cloſe to the Stalks. The Flowers are produced in long Spikes at the End of the Branches, which are yellow, and ſhaped like thoſe of the 1ſt Sort, but larger; theſe are ſucceeded by roundiſh flat Pods, having two Cells, each containing two Seeds. This flowers and ripens its Seeds about the ſame Time as the former.

The 3d Sort hath ſeveral weak ligneous Stalks, about 4 Inches long, garniſhed with very narrow hoary Leaves, and are terminated by ſhort Spikes of yellow Flowers, ſmaller than thoſe of the laſt Sort; the Pods are alſo much leſs, and have two Cells, each containing a ſingle Seed. This flowers and ſeeds at the ſame Time.

The 4th Sort is perennial; this branches out from the Root into ſeveral ſlender Branches, which divide again into many ſmaller; theſe are garniſhed with very narrow hoary Leaves, ſitting cloſe to the Branches. The Flowers are produced in long Spikes at the End of the Branches; they are ſmall, white, and ſhaped like thoſe of the other Sorts, but the Spikes terminate in a roundiſh Bunch. This Plant riſes a Foot and a Half high, ſpreading out on every Side. It flowers in *June*, and the Seeds ripen in Autumn.

The 3 Sorts firſt mentioned, are low annual Plants, which grow naturally in the South of *France*, in *Spain*, and *Italy*; theſe are preſerved in Botanick Gardens for Variety, but have little Beauty; they are all of a hoary white, both Leaves and Stalks, which is much lighter in the warm Countries, than in *England*; theſe are propagated by Seeds, which ſhould be ſown upon a Border of light Earth, where they are to remain, and require no other Culture, but to thin them if they come up too cloſe, and keep them clean from Weeds. The Seeds may be ſown either in Spring, or Autumn; thoſe which are ſown in Autumn will grow much larger, and flower earlier than thoſe which are ſown in the Spring, and from them there will be a greater Certainty of having ripe Seeds. If the Seeds ſcatter, the Plants will come up, and, if kept clean from Weeds, they will thrive without farther Care.

The 4th Sort is a perennial Plant, ſo ſhould be ſown upon a warm Border, and on a dry Soil; this grows naturally on the Borders of the Sea, in the South of *France* and *Italy*, but when it is cultivated in a Garden, if the Soil is rich and moiſt, the Plants generally grow luxuriant in Summer, and are thereby too replete with Moiſture, ſo that they are frequently killed by the Froſt in Winter, but when they grow on a poor dry gravelly Soil, or on a Wall, their Stalks will be ſhort, ligneous, and tough, ſo will endure the Cold of this Climate, and continue ſeveral Years; this is propagated by Seeds, which ſhould be ſown where the Plants are deſigned to remain; or if any of them are removed, it ſhould done when the Plants are young, for they do not bear tranſplanting well, when they are grown pretty large.

CNEORUM. *Lin. Gen. Plant.* 47. *Chamelæa. Tourn. Inſt. R. H.* 651. Widow-wail, in *French*, *Camelée*.

The *Characters* are,

The Flower hath a ſmall permanent Empalement, indented in three Parts. It hath 3 *narrow oblong Petals, which are erect, and* 3 *Stamina, which are ſhorter than the Petals, terminated by ſmall Summits. In the Center is ſituated an obtuſe three-cornered Germen, ſupporting a firm erect Style, crowned by a trifid ſpreading Stigma. The Germen afterward becomes a globular dry Berry, with three Lobes, having* 3 *Cells, each containing one round Seed.*

We have but one *Specie* of this Genus, *viz.*

CNEORUM. *Hort. Cliff.* 18. Widow-wail. This is the *Chamelæa tricoccos*, of *Dodonæus* and *Caſpar Bauhin*.

This is an humble Shrub, which ſeldom riſes more than two Feet and a Half high in this Country, but ſpreads out on every Side with many lateral Branches, ſo as to form a thick Buſh. The Stems are ligneous, and almoſt as hard as thoſe of the Box-Tree, and the Wood is of a pale yellow Colour under the Bark. The Branches are garniſhed with Leaves, which are ſtiff, of an oval Shape, about an Inch and a Half long, and a Quarter of an Inch broad, of a dark green Colour, having a ſtrong Vein, or Rib, through the Middle. The Flowers are produced ſingle from the Wings of the Leaves, toward the Extremity of the Branches, which are of a pale yellow Colour, compoſed of three Petals, which ſpread open, and a round Germen at the Bottom, having a ſingle Style, which doth not riſe above half the Length of the Stamina, which are Three in Number, ſtanding erect, and are ſituated between the Petals. After the Flowers are fallen, the Germen becomes a Fruit, compoſed of three Seeds joined together as thoſe of *Tithymalus*, or Spurge; theſe are firſt green, afterwards turn of a brown Colour, and when ripe are black. The Flowers begin to appear in *May*, and are ſucceeded by others during the Summer Months; and, when the Autumn proves favourable, theſe Shrubs will continue in flower till the End of *October*.

As this is a low ever-green Shrub, it may be very ornamental, if placed in the Front of Plantations of ever-green Trees and Shrubs; for as the Branches grow compact, and are well garniſhed with Leaves, it will hide the Ground between the taller Shrubs better than moſt other Plants; and, being durable will not want to be renewed; it riſes better from ſcattered Seeds, than if ſown with Care.

This was formerly preſerved in Green-houſes, and thought too tender to live in the open Air in *England*, but of late it has been planted in the full Ground, where it reſiſts the Cold of our ordinary Winters very well, and is ſeldom injured but by extreme hard Froſts; nor do theſe kill the Plants which grow upon dry, rocky, or rubbiſhy Soils, where their Shoots are generally ſhort and firm, but in a moiſt rich Ground, where the Shoots are more luxuriant, they are ſometimes injured.

It is propagated by Seeds, ſown in Autumn ſoon after they are ripe, and then the Plants will come up the following Spring; whereas thoſe kept till Spring, remain a Year in the Ground, and often miſcarry; they may be ſown in a Bed of common Earth, covering them Half an Inch deep, and will require no other Care but to keep the Plants clear from Weeds the following

Summer; in the Autumn following they may be tranſplanted where they are to remain.

CNICUS. *Lin. Gen. Pl.* 833. *Tourn.* Bleſſed Thiſtle.

The *Characters* are,

The Empalement of the Flower is compoſed of many oval Scales; thoſe toward the Top are terminated by branching Spines. The Flower is compoſed of ſeveral hermaphrodite Florets, which are uniform; theſe are Funnel-ſhaped, and cut at the Top into 5 equal Segments ſtanding erect, each having 5 ſhort hairy Stamina, terminated by cylindrical Summits. In the Center is ſituated a ſhort Germen, crowned with Down, ſupporting a ſlender Style, terminated by an oblong Stigma. The Germen becomes a ſingle Seed, crowned with Down, and ſhut up in the Empalement.

The *Species* are,

1. Cnicus *caule diffuſo, foliis dentato-ſinuatis. Hort. Cliff.* 395. Bleſſed Thiſtle with a diffuſed Stalk, and Leaves indented in Sinuſes. This is the *Cnicus. Sylveſtris hirſutior, ſive Carduus Benedictus. C. B. P.* 378. Hairy wild *Cnicus*, or Bleſſed Thiſtle.

2. Cnicus *caule erecto, foliis inferioribus laciniatis, ſuperioribus integris concavis. Hort. Cliff.* 394. *Cnicus* with an upright Stalk, whoſe lower Leaves are laciniated, the upper entire and concave. This is the *Cnicus pratenſis, Acanthi folio, flore flaveſcente. Tourn.* Meadow *Cnicus* with a Bears-breech Leaf, and yellowiſh Flowers.

3. Cnicus *foliis amplexicaulibus, ſinuato-pinnatis, ſpinoſis, caule ſimplici, floribns ſeſſilibus. Lin. Sp. Plant.* 826. *Cnicus* with winged, ſinuated, prickly Leaves, embracing the Stalk, which is ſingle, and Flowers ſiting cloſe on the Top. This is the *Cirſium Alpinum ſpinoſiſſimum, floribus ochro-leucis inter flaveſcentia folia congeſtis. Haller. Tab.* 20. Prickly *Alpine Cirſium* with Flowers of a yellow white, growing in Cluſters between the Leaves, which are yellowiſh.

4. Cnicus *foliis Cordatis, petiolis criſpis, ſpinoſis, amplexicaulibus, floribus cernuis. Hort. Upſal.* 251. *Cnicus* with Heart-ſhaped Leavs, having curled prickly Foot Stalks, which embrace the Stalks, and a nodding Flower.

The 1ſt Sort is the common *Carduus* which is uſed in Medicine; this is an annual Plant, which periſhes ſoon after the Seeds are ripe. It grows naturally in *Spain*, and the Iſlands of the *Archipelago*, but is cultivated in Gardens in *England* to ſupply the Markets.

From the fibrous Root ariſes ſeveral rediſh hairy Stalks, about two Feet high, which divide upward into ſmaller Branches, and are garniſhed with long, hairy, green Leaves, cut in, or torn on both Sides into ſeveral Jags, each terminating into a ſoft harmleſs Spine. On the Top of the Stalks grow the Flowers in oval Heads; theſe are compoſed of ſeveral hermaphrodite Florets, of a pale yellow Colour, they are fiſtular, and cut at the Top into five Parts; theſe are included in a ſcaly Empalement, each Scale terminating in a long ſlender Spine, indented on both Sides like the Teeth of a ſaw; the Florets are ſucceeded by ſingle, oblong, ſtriated Seeds of a brown Colour, encompaſſed at the Top with a Crown of ſtiff Briſtles, ſtanding out like the Feathers of a Shuttlecock; the whole Plant is very bitter. It flowers in *June*, and the Seeds ripen in Autumn.

The Seeds of this Plant ſhould be ſown in Autumn on a Bed of common Earth, in a dry Part of the Garden, where the Plants will live through the Winter, and in Spring they ſhould be tranſplanted, placing them in Rows at a Foot or more diſtant, and nine Inches aſunder in the Rows; if the Seaſon proves dry, it will be neceſſary to water the Plants 2 or 3 Times, till they have taken Root, after which they will require no other Culture but to keep them clean from Weeds.

The Seeds may alſo be ſown in Spring, and the Plants treated in the ſame Way, but theſe do not ſucceed ſo well as thoſe ſown in Autumn, nor do the Plants grow ſo large. The beſt Time to cut this Plant for Uſe, is when the Flowers are fully blown, before the lower Leaves decay; when it is cut, it ſhould be ſpread in a dry ſhady Place for 3 or 4 Days, then tied up in Bunches, and hung up in a dry Room upon Strings in Rows, that the Air may paſs freely between them, which will prevent their growing mouldy, or roting.

The 2d Sort grows naturally in the northern Parts of *Europe*. Mr. *Ray* found it growing on the *Rhine* near *Baſil*. This hath a perennial Root, which ſends out many long jagged Leaves ſpreading on every Side near the Ground, ſo as to form a thick Bunch, theſe are jagged almoſt to the Mid-rib, in form of a winged Leaf. The Stalks are ſtriated, ſmooth, and riſe above 4 Feet high, dividing at the Top into ſmaller Branches: The Leaves, which grow upon the Stalks, are entire and Heart-ſhaped, they are ſawed on their Edges, each Indenture ending in a weak Spine. Theſe are concave, eſpecially thoſe near the Top, and half embrace the Stalks with their Baſe: The Stalks are terminated by large Heads of Flowers, growing in Cluſters, they are of a whitiſh yellow Colour, and incloſed in a ſcaly Empalement. Theſe are ſucceeded by ſmall oblong Seeds, crowned with a briſtly Down, it flowers in *June*, and the Seeds ripen in Autumn.

This Sort may be propagated by Seeds, or parting the Roots. The beſt Time to part the Roots is in Autumn, it delights in Shade, and requires no farther Care but to keep it clean from Weeds.

The 3d Sort grows naturally on the *Alps*, and on the Mountains of *Auſtria*; this riſes near 4 Feet with an upright ſingle Stalk, garniſhed with ſinuated Leaves, which are very prickly, and embrace the Stalks with their Baſe; the Flowers are produced at the Top of the Stalk, ſurrounded by a Cluſter of broad prickly Leaves, ſitting cloſe to the Stalk, theſe are of a whitiſh Yellow, and appear at the ſame Time with the former Sort. This is perennial and may be propagated as the former, it requires a moiſt Soil, and a ſhady Situation.

The 4th Sort grows naturally in *Siberia*, from whence the Seeds were ſent to the Imperial Garden at *Peterſburgh*, where they ſucceeded, and produced Seeds, Part of which were ſent me; this hath a perennial Root, compoſed of thick fleſhy Fibres. The Leaves which riſe immediately from the Root, are near a Foot long, and near ſix Inches broad in the Middle, diminiſhing toward each End, and at a little Diſtance from the Baſe are much contracted, but are wider at the End, theſe have ſcarce any Foot Stalks; they are of a deep green on their upper Side, but white on their under, and ſharply ſawed on their Edges. The Stalks riſe more than 6 Feet high, ſending out on each Side ſmall Branches above a Foot long, the Stalks are ſtriated, and of a rediſh Colour, they are garniſhed with Heart-ſhaped

Leaves, which almoſt embrace the Stalks with their Baſe, and are of the ſame Colour with thoſe below; each Branch is terminated by one large globular Head of yellowiſh Flowers, included in a ſcaly Empalement, each Scale ending with a ſharp Spine. This flowers in *June*, and the Seeds ripen in Autumn. It may be propagated as the two former Sorts, but requires a moiſt Soil, a ſhady Situation, and only to keep it clear from Weeds. The Inhabitants of *Siberia* eat the tender Stalks of this Plant, when boiled, inſtead of other Vegetables.

This is a perennial Plant, and may be propagated by parting the Roots; the beſt Time for doing this is in Autumn, that the Plants may get good Root in Winter; for thoſe which are tranſplanted in Spring, do not flower well the firſt Year, unleſs they are planted in a moiſt Soil. As theſe Plants grow very large, ſo they are not proper Furniture for ſmall Gardens, where they will take up too much Room, for they ſhould not be planted nearer than 4 Feet from each other, or if they are too near any other Plants, they will rob them of their Nouriſhment; for the Roots of theſe extend to a great Diſtance; ſo that 2 or 3 of theſe Plants, for Variety, are ſufficient for any Garden, which may be planted at a Diſtance from choicer Plants.

It is alſo propagated by Seeds, which may be ſown in Spring on a Bed of common Earth, in the ſame Manner as the other Sorts, and only requires to be thinned, and kept clean from Weeds tell Autumn, when they may be tranſplanted where they are deſigned to remain.

COA. *See* Hippocratea.

COAST-MARY. *See* Tanacetum.

COCCIGRIA. *See* Rhus.

COCCOLOBIS. *Brown. Hiſt. Jam.* 209. *Guajabara. Plum. Mſſ. Houſt. Hort. Sicc.* The Sea-Side Grape; in *French*, *Raiſinier*.

The *Characters* are,

The Flower has no Empalement; it has one permanent Petal which is cut into 5 Segments almoſt to the Bottom; it has a fleſhy umbilical Nectarium which ſurrounds the Germen, and 6, 7, or more erect ſpreading Stamina, terminated by headed Summits, and an oval Germen, ſupporting a ſhort Style, crowned by a torn Stigma. The Germen afterwards turn to a fleſhy Berry including an oval Nut, which is wrapped up in the Petal of the Flower.

The *Species* are,

1. Coccolobis *foliis craſſis orbiculatis, ſinu aperto. Hiſt. Jam.* 209. Sea-ſide Grape with round thick Leaves which are open at the Baſe. This is the *Guajabara racemoſa, foliis coriaceis ſubrotundis. Plum. Mſſ.* Branching *Guajabara*, with roundiſh leathery Leaves, commonly called Sea-ſide Grape in the *Weſt-Indies*.

2. Coccolobis *foliis cordato-oblongis, racemo terminatrice, caule arboreo. Burm.* The Sea-ſide Grape with oblong Heart-ſhaped Leaves, and a Tree-like Stalk, terminated by long Bunches of Fruit. This is the *Guajabara alia racemoſa, foliis oblongis. Plum. Mſſ.* Another branching *Guajabara* with oblong Leaves.

3. Coccolobis *foliis cordato-ovatis, racemo terminatrice.* Sea-ſide Grape with Heart-ſhaped oval Leaves, and the Branches terminated by long Bunches of Fruit. This is the *Guajabara foliis minoribus & longioribus, fructu racemoſo, minima atropurpureo. Houſt. Mſſ.* Sea-ſide Grape with ſmaller and longer Leaves, and the leaſt dark purple Fruit growing in long Bunches.

4. Coccolobis *foliis peltato-cordatis.* Sea-ſide Grape with Target Heart-ſhaped Leaves.

5. Coccolobis *foliis lanceolatis venoſis, uvis minoribus punctatis.* Sea-ſide Grape with Spear-ſhaped veined Leaves, and ſmall ſpotted Fruit. This is the *Uvifera arbor Americana fructu punctato. Pluk. Phyt. Tab.* 237. *fig.* 4. The chequered Grape.

6. Coccolobis *foliis ovato-lanceolatis acuminatis, caule arboreo.* Mountain Grape with oval Spear-ſhaped Leaves ending in acute Points, and a Tree-like Stalk.

The 1ſt Sort grows naturally in moſt of the Iſlands in the *Weſt-Indies*, on the ſandy Sea Shores, from whence the Inhabitants have given it the Title of Sea-ſide or *Mangrove* Grape; this ſends up ſeveral woody Stalks from the Root, which riſe 8 or ten Feet high, with a light brown ſmooth Bark, and garniſhed with Leaves which are placed alternately; theſe are very thick and ſtiff, almoſt round; they are from 5 to 7 Inches Diameter, of a lucid green on their upper Side, and veined on their under, ſtanding upon ſhort Foot Stalks. The Flowers come out from the Wings of the Stalks; they are diſpoſed along the Foot Stalk in long ſlender Bunches like thoſe of the common Currant; theſe Bunches are 5 or 6 Inches long. The Flowers are white, and the Petal is cut into 6 Parts; theſe are ſucceeded by Berries about the Size of a common Grape, of a purpliſh red Colour, incloſing a Nut of the ſame Shape. The Fruit is eaten by the Inhabitants of the Iſlands in the *Weſt-Indies*, being of a pleaſant aſtringent Taſte.

This Plant is figured by *Lobel* under the Title of *Populus novi orbis*, and had been copied by *Parkinſon* in his *Herbal*, and ſeveral others; it is ſuppoſed his Figure was taken from a dried Specimen, which had been gathered after the Fruit was fallen off, ſo he took the Foot-Stalk upon which the Fruit had grown for a Katkin of a Poplar Tree.

The 2d Sort grows naturally about *Carthagena*, and other Places in the *Weſt-Indies*; this ſends up many ſtrong Stalks from the Root, which riſe near 20 Feet high, and are covered with ſmooth gray Bark. The Leaves are from 7 to 9 Inches long, and from 3 to 4 broad; they are indented at the Foot Stalk like a Heart, but end in a Point, having ſeveral tranſverſe Veins running alternately from the Midrib to the Border; they are of a thick ſtiff Conſiſtence, and of a lucid green on their upper Side. The Flowers are produced in long ſlender Bunches at the End of the Branches; they are compoſed of 5 white acute-pointed Petals, ſpread open in Form of a Star; theſe are ſucceeded by roundiſh purple Fruit, ſmaller than the former Sort, and not ſo well flavoured.

The 3d Sort was diſcovered by Dr. *Houſtoun*, growing naturally at *La Vera Cruz*; this ſends up many ſhrubby Stalks from the Root, which riſe 5 or 6 Feet high, having a light gray Bark. The Leaves are oval and Heart-ſhaped, they are 3 Inches and a Half long, and 2 and a Half broad indented at their Foot Stalks; theſe are not ſo ſtiff as thoſe of the 2 former Sorts. The Fruit is diſpoſed in a ſlender Bunch at the End of the Branches; they are ſmall, of a dark purple Colour, and are never eaten by the Inhabitants.

The 4th Sort was diſcovered by the ſame, growing naturally at *Campeachy*; this ſends up many ſlender ligneous Stalks from the Root, which riſe 7 or 8 Feet, covered with a gray Bark, and garniſhed with Heart-ſhaped Leaves about 4 Inches long and 3 broad, whoſe Foot Stalks are joined to the under Part of the Leaves, like the Handle of a Target. The Leaves are of a lucid green, and ſmooth on their upper Side; the Flowers and Fruit of this Sort I have not ſeen.

The 5th Sort grows naturally in *Jamaica*, from whence the late Dr. *Houſtoun* ſent me the Seeds; this ſends up many ſlender ligneous Stalks from the Root, which riſe 4 or 5 Feet high, covered with a brown Bark. The Leaves are 6 Inches long and 3 broad, having many ſtrong Veins running from the Midrib toward the Border; they are of a light green Colour, and not ſtiff. The Fruit is ſmall, of a purple Colour, growing in ſlender Bunches from the End of the Branches.

The 6th Sort grows naturally on the North Side of the Iſland of *Jamaica* on the Mountains, ſo is generally called there the Mountain Grape; this grows to a large Size, and is eſteemed for its Wood, which is ranked among their beſt Sort of Timber. The Seeds were ſent me by *William Williams*, Eſq; of *St. Ann's* in *Jamaica*. The Trunk grows to the Size of a Man's Body; it riſes to the Height of 30 Feet, ſending out ſome ſide Branches, garniſhed with oval Spear-ſhaped Leaves, ending in acute Points, they are 6 Inches long, and 2 Inches and a Half broad toward their Baſe; of a bright green on their upper Side, but pale on their under, of a pretty thick Conſiſtence, and ſtand on ſhort Foot Stalks. The Fruit is produced on long ſlender Foot Stalks, of a purpliſh Colour, and near as large as thoſe of the firſt Sort.

Theſe Plants riſe eaſily from Seeds, if they are ſown in Pots, and plunged into a hot Bed of Tan; but, as they do not produce Fruit in *England*, the Seeds muſt be procured from the *Weſt-Indies*. When the Plants are come up about 2 or 3 Inches high, they ſhould be each tranſplanted into a ſmall Pot, filled with light ſandy Earth, and plunged in a freſh hot Bed of Tan, where they muſt be ſhaded from the Sun until they have taken new Root; after which they muſt be treated as the *Annona* and other tender Plants from hot Countries, giving them a proper Share of Air in warm Weather, and gently refreſhing them with Water as they may require it; but they ſhould not have too much Wet, for they do not perſpire much, their Leaves being of a very cloſe Contexture, eſpecially thoſe of the 1ſt and 2d Sorts. In Autumn they ſhould be removed into the hot Houſe, and plunged in the Bark Bed, otherwiſe they will not make great Progreſs; therefore they ſhould always remain in the Tan Bed, giving them Plenty of Air in Summer, when the Weather is warm.

The Leaves of theſe Plants continue in Verdure all the Year, ſo make a fine Appearance in the hot Houſe in Winter; but I have never ſeen the Flowers of either Sort produced here.

COCHLEARIA. *Lin. Gen. Plant.* 720. *Tourn. Inſt.* Spoonwort, or Scurvy Graſs, in *French*, *Herbe aux Cuilliers*.

The *Characters* are,

The Empalement of the Flower is compoſed of four oval concave Leaves. The Flower hath four Petals, placed in form of a Croſs, which ſpread open, and are twice as large as the Leaves of the Empalement; it hath ſix Stamina, four of which are longer than the other two; theſe are terminated by obtuſe compreſſed Summits. The Germen is Heart-ſhaped, ſupporting a ſhort ſingle Style, crowned by an obtuſe Stigma; the Germen afterward become a gibbous, Heart-ſhaped, compreſſed Pod, faſtened to the Style, having 2 Cells, in each of which are lodged 4 roundiſh Seeds.

The *Species* are,

1. COCHLEARIA *foliis radicalibus ſubrotundis, caulinis oblongis ſubſinuatis. Flor. Lapp.* 256. Scurvy Graſs, whoſe lower Leaves are roundiſh, and thoſe on the Stalks oblong and ſinuated. This is the *Cochlearia folio ſubrotundo. C. B. P.* Round leaved Scurvy Graſs.

2. COCHLEARIA *foliis radicalibus lanceolatis, integerrimis, caulinis ſinuatis.* Scurvy Graſs, whoſe lower Leaves are Spear-ſhaped and entire, and thoſe on the Stalk ſinuated. This is the *Cochlearia folio ſinuato. C. B. P.* 110. Sea Scurvy Graſs.

3. COCHLEARIA *foliis reniformibus, integris. Hort. Cliff.* 498. Scurvy Graſs with Kidney-ſhaped Leaves, which are entire. This is the *Cochlearia minima ex montibus Walliæ. Boerh. Ind.* Leaſt *Welch* Scurvy Graſs.

4. COCHLEARIA *foliis haſtatis, angulatis. Flor. Suec* 196. Scurvy Graſs with angular Spear-ſhaped Leaves. *Cochlearia Armorica. Daniſh*, or Ivy-leaved Scurvy Graſs.

5. COCHLEARIA *foliis radicalibus lanceolatis, crenatis, caulinis inciſis. Hort. Cliff.* 332. Scurvy Graſs whoſe lower Leaves are Spear-ſhaped and crenated, and thoſe on the Stalks jagged. This is the *Raphanus Ruſticanus. C. B. P.* 96. Horſe Radiſh.

6. COCHLEARIA *altiſſima glaſti folio. Inſt. R. H.* 216. Talleſt Scurvy Graſs with a Woad Leaf.

The 1ſt Sort grows naturally on the Sea Shore in the North of *England*, and in *Holland*, but is cultivated for Uſe in the Gardens near *London*: This is an annual Plant, for the Seeds are ſown, and the Plants decay within the Compaſs of one Year, but the Seeds ſhould be ſown early in Autumn; this hath a fibrous Root, from which ariſe many round ſucculent Leaves, which are hollowed like a Spoon; the Stalks riſe from 6 Inches to a Foot high; theſe are brittle, and garniſhed with Leaves which are oblong and ſinuated. The Flowers are produced in Cluſters at the End of the Branches, conſiſting of 4 ſmall white Petals, which are placed in form of a Croſs; theſe are ſucceeded by ſhort, roundiſh, ſwelling Seed Veſſels, having 2 Cells, divided by a thin Partition, in each of theſe is lodged 4 or 5 roundiſh Seeds. It flowers in *April*, and the Seeds ripen in *June*, ſoon after which it decays.

This Sort is propagated in Gardens for medicinal Uſe, by ſowing the Seeds in *July*, ſoon after they are ripe, in a moiſt ſhady Spot of Ground; and when the Plants come up, they ſhould be thinned, ſo as to be left at about 4 Inches Diſtance each Way. The Plants that are taken out may be tranſplanted into other ſhady Borders, if you have Occaſion for them; otherwiſe they may be hoed out (as is practiſed for Onions, Carrots, *&c.*); and at the ſame Time all the Weeds may be hoed down, ſo as to clear the Plants entirely from them, that they may have Room to grow ſtrong. In Spring theſe Plants will be fit for Uſe; and thoſe ſuffered to remain will run up to Seed in *May*, and perfect Seeds in *June*.

If ſown in Spring, the Seeds ſeldom grow well, therefore the beſt Time is ſoon after they are ripe; the Plants rarely live after producing Seeds, ſo ſhould be ſown every Year.

The Sea Scurvy Graſs is alſo uſed in Medicine; but this grows in the ſalt Marſhes in *Kent* and *Eſſex*, where the ſalt Water overflows it almoſt every Tide; and can rarely be made to grow in Gardens, or at leaſt to laſt longer there than one Year; but it being eaſily gathered in the Places beforementioned, the Markets are ſupplied from thence by the Herb Women, who make it their Buſineſs to gather Herbs.

This Sort differs from the firſt in the Shape of its Leaves; theſe being longer, and ſinuated on their Edges. It flowers a little later in the Seaſon; both theſe Sorts are uſed in Medicine.

The little *Welch* Scurvy Graſs is a biennial Plant, and may be preſerved in a Garden, if planted in a ſtrong Soil, and a ſhady Situation. This is preſerved in curious Gardens of Plants, but is not of any Uſe in Medicine, though it is by far the warmeſt and moſt pungent of all Sorts. This Plant grows plentifully in *Muſcovy*, as alſo in *Davis's Streights*.

The 4th Sort is a low trailing Plant, whoſe Stalks grow ſix Inches long, and lie proſtrate on the Ground; the Leaves are angular, and in Shape like thoſe of Ivy. This is found growing naturally in ſome Parts of *England*, and is annual. It flowers and ſeeds about the ſame Time as the firſt Sort.

The 6th Sort is a biennial Plant, which uſually grows about a Foot and a Half high, with upright Stalks, which are garniſhed with angular Heart-ſhaped Leaves embracing the Stalks with their Baſe; the Flowers are produced in looſe Spikes at the End of the Branches, they are very ſmall, white, and are ſucceeded by ſhort ſwelling Pods filled with round Seeds. It flowers in *May*, and the Seeds ripen in *July* and *Auguſt*. This may be propagated by Seeds, as the common Sort: and if ſown in Autumn, will more certainly ſucceed than in the Spring.

The Horſe Radiſh is propagated by Cuttings or Buds from the Sides of the old Roots. The beſt Seaſon for this Work is in *October* or *February*; the former for dry Lands, the latter for moiſt; the Ground ſhould be trenched at leaſt two Spits deep, or more if it will allow of it. The Manner of planting it is as follows: Provide yourſelf with a good Quantity of Offſets, which ſhould have a Bud upon their Crowns; but it matters not how ſhort they are; therefore the upper Part of the Roots which are taken up for Uſe, ſhould be cut off about two Inches long with the Bud to it, which is eſteemed the beſt for planting. Then make a Trench 10 Inches deep, in which you ſhould place the Offſets at about 4 or 5 Inches Diſtance each Way, with the Bud upward, covering them up with the Mould that was taken out of the Trench: Then proceed to a ſecond Trench in like Manner, and continue the ſame till the whole Spot is planted. After this, level the Surface of the Ground even, obſerving to keep it clear from Weeds, until the Plants are ſo far advanced, as to be ſtrong enough to over-bear and keep them down. With this Management, the Roots of the Horſe Radiſh will be long and ſtrait, and free from ſmall lateral Roots; and the 2d Year after planting will be fit for Uſe. 'Tis true, they may be taken up the firſt Year; but then the Roots will be but ſlender; therefore it is the better way to let them remain until the ſecond Year. The Ground in which this is planted ought to be very rich, otherwiſe the Roots will make but a ſmall Progreſs.

COFFEA. *Lin. Gen. Plant.* 209. *Juſs. Act. Reg. Scien.* 1713. *Jaſminum. Com. Cat.* The Coffee-Tree.

The *Characters* are,

The Flower hath a ſmall Empalement divided into four Parts ſitting upon the Germen. The Flower hath one Petal which is Funnel-ſhaped, having a narrow cylindrical Tube, which is much longer than the Empalement, and is plain at the Top, where it is indented in five Parts; it hath five Stamina which are faſtened to the Tube, and are terminated by long ſlender Summits. The roundiſh Germen ſupports a ſingle Style, crowned by two thick reflexed Stigmas; the Germen becomes an oval Berry, containing two hemiſpherical Seeds, plain on one Side, and convex on the other.

We have but one *Species* of this Genus, *viz.*

COFFEA. *Hort. Cliff.* 59. The Coffee-Tree. This is the *Jaſminum Arabicum Caſtaneæ folio, flore albo odoratiſſimo, cujus fructus Coffee in officinis dicuntur nobis. Arabian* Jaſmine with a Cheſtnut Leaf, and a white very ſweet Flower, whoſe Fruit is called Coffee.

This Tree is ſuppoſed to be a Native of *Arabia Felix*; where it was firſt cultivated for Uſe, and to this Day, is the Country from whence the beſt Coffee is brought to *Europe*; though the Plant is now propagated in many Parts of *America*, but the Produce of thoſe Countries being greatly inferior to that of *Arabia*, hath occaſioned its preſent Diſrepute in *England*, ſo that it is ſcarce worth importing; but this might be remedied, if the Coffee Planters, in the *Weſt-Indies*, could be prevailed on to try a few Experiments, which I ſhall hereafter propoſe, being founded on thoſe which have been made in *England*, upon the Berries produced here. But I ſhall firſt treat of the Plant, with its Culture in *England*.

This is a low Tree in the native Country of its Growth, where it ſeldom riſes more than 16 or 18 Feet high; but in *England*, I have not ſeen any above 10 or 12. The main Stem grows upright, and is covered with a light brown Bark, the Branches are produced horizontally and oppoſite by Pairs, which croſs each other at every Joint, ſo that every Side of the Tree is fully garniſhed with them: The lower Branches being the longeſt, the others gradually decreaſing to the Top, form a ſort of Pyramid, the Leaves are alſo produced oppoſite by Pairs; theſe when fully grown, are about four Inches long, and one Inch and a Half broad in the Middle, decreaſing toward each End; the Borders are waved, and the Surface is of a lucid Green. The Flowers are produced in Cluſters, at the Baſe of the Leaves, ſitting cloſe to the Branches; theſe are tubulous, and ſpread open at Top, where they are divided into five Parts; they are of a pure white, and have a very grateful Odour, but are of ſhort Duration. They are ſucceeded by oval Berries, which are firſt green, when fully grown, they turn red; and afterward change to black when fully ripe. Theſe have a thin pulpy Skin, under which are two Seeds joined, theſe are flat on the joined Sides, with a longitudinal Furrow, and convex on their outer Side.

As the Coffee Tree is an Ever-green, it makes a beautiful Appearance at every Seaſon in the Stove, but particularly when in flower, alſo when the Berries are red, which is generally in Winter; they continue a long Time in that State, therefore there is ſcarce any Plant, that more deſerves a Place in the Stove than this.

It is propagated by the Berries, which muſt be ſown ſoon after they are gathered from the Trees, for if they are kept a ſhort Time they will not grow. I have frequently ſent the Berries abroad by the Poſt, but when they have been a Fortnight in their Journey they have all failed, and this has conſtantly happened every where, for the Berries which were ſent from *Holland* to *Paris* did not grow; nor did thoſe which were ſent from *Paris* to *England* grow: So that wherever theſe Trees are deſired, the young Plants muſt be ſent, if it be at any Diſtance from the Place where they grow.

The Berries ſhould be planted in ſmall Pots, filled with light Kitchen Garden Earth, and plunged into a hot Bed of Tanners Bark; theſe Pots muſt be watered gently once or twice a Week, but the Earth muſt not be too moiſt, leſt it rot the Berries. If the Bed be of a proper Temperature of Warmth, the Plants will appear in a Month or five Weeks time; and in about three Weeks more will be fit to tranſplant. For as many of the Berries will produce two Plants, ſo the ſooner they are parted, the better their Roots will be; for when they grow double till they have made large Roots, they will be ſo intermixed and entangled, as to render it difficult to ſeparate them, without tearing off their Fibres, which will greatly prejudice the Plants. When theſe are tranſplanted, they muſt be each put into a ſeparate ſmall Pot, filled with the ſame Earth as before, and plunged into the Tan Bed again; which ſhould be ſtirred up to the Bottom, and if required, ſome new Tan ſhould be mixed with it, to renew the Heat. Then the Plants ſhould be gently watered, and the Glaſſes of the hot Bed muſt be ſhaded every Day till they have taken new Root; after which the Plants ſhould have freſh Air admitted to them every Day, in Proportion to the Warmth of the Seaſon: During the Summer they will require frequently to be refreſhed with Water; but they muſt not have it in too great Plenty: For if their Roots are kept too moiſt, they are very ſubject to rot, then the Leaves will ſoon decay and drop off, and the Plants become naked; when this happens, they are ſeldom recovered again. The firſt Sign of theſe Plants being diſordered, is, their Leaves ſweating out a clammy Juice, which attracts the ſmall Inſects, which frequently infeſt the Plants in Stoves, which are not in Health, and theſe cannot be deſtroyed, till the Plants are recovered to Vigour: For although the Plants are ever ſo carefully waſhed and cleaned from theſe Inſects, yet they will be ſoon attacked by them again, if they are not recovered to Health, for theſe Inſects are never ſeen upon any of the Plants while they are in perfect Vigour; ſo that upon the firſt Attack, the Plants ſhould be ſhifted into freſh Earth, and all poſſible Care taken to recover them, without which all the waſhing and cleaning of the Plants will be to little Purpoſe. The Diſorders attending the Coffee Trees, generally proceed from either being put into Pots too large for them, nothing being of worſe Conſequence than over potting them; or from the Earth being too ſtiff, or being over watered. If theſe are properly taken Care of, and the Stove kept always in a proper Temperature of Heat, the Plants will thrive, and produce plenty of Fruit.

I have made Trial of ſeveral Compoſitions of Earth, for theſe Plants; but have found none of them equal to that of a Kitchen Garden, where the Soil is naturally looſe, and not ſubject to bind; and if it has conſtantly been well wrought and properly dunged; this without any Mixture, is preferable to any other.

The Plants ſhould not be too often tranſplanted, for that will greatly retard their Growth. If they are new potted twice a Year at moſt it will be ſufficient; though unleſs the Plants make great Progreſs, they will not require to be removed oftner than once in a Year, which ſhould be in Summer, that they may have Time to get good Roots again before Winter. During the warm Weather in Summer, theſe Plants ſhould have a large Share of Air, but they muſt not be expoſed abroad at any Seaſon: For although they may have the Appearance of thriving in the open Air, during the Heat of Summer; yet when they are removed into the Stove again, their Leaves will fall off, and the Plants will make but an indifferent Appearance the following Winter, if they ſhould ſurvive it: Therefore it is the better Method to keep them conſtantly in the Stove, and admit a proportionable Share of Air to them every Day, according to the Heat of the Seaſon; and they will require Water two or three Times a Week in warm Weather, but in Winter they muſt have it more ſparingly; the Stove in which they are placed, ſhould be kept to the Heat aſſigned for the *Ananas* upon the Botanical Thermometers.

There has been ſome of theſe Plants propagated by Cuttings, and alſo from Layers; but theſe are long before they make Roots, and the Plants ſo raiſed, are never ſo ſtrong and thriving, as thoſe which ariſe from Berries, therefore where the Berries can be procured, it is much the beſt Method to propagate the Plants by Seeds.

When they are tranſplanted, their Roots ſhould not be too much cut or trimmed; the decayed or rotten Fibres ſhould be pruned off, and thoſe which are cloſely matted to the Side of the Pots ſhould be trimmed, but not cut too near to the Stem, for the old Fibres do not put out new Roots very kindly, eſpecially thoſe which are become tough, ſo that there ſhould always be a ſufficient Number of young Fibres left to ſupport the Plants, till new ones are produced.

The Coffee Plants were firſt carried from *Arabia* to *Batavia* by the *Dutch*, and from thence they were afterward brought to *Holland*, where great Numbers of the Plants were raiſed from the Berries which thoſe Plants produced: And from theſe moſt of the Gardens in *Europe* have been furniſhed. A great Number of theſe young Plants, which were raiſed at *Amſterdam*, were ſent to *Surinam* by the Proprietors of that *Iſland*; where the Trees were ſoon propagated in great Plenty. And from thence the Plants have been diſperſed to moſt of the Iſlands in the *Weſt Indies*: For as the Plants raiſed from the Berries, produce Fruit in eighteen Months from planting, in the warm Countries, ſo Plantations of theſe Trees may be ſoon made in any of thoſe Countries, where the Temperature of the Air is proper for their Production; but the Trees will not grow in the open Air any where if there is a Winter: So that without the Tropicks, they cannot be expected to grow abroad.

The *French* have made great Plantations of theſe Trees in their Settlements in the *Weſt Indies*, and alſo in the Iſle of *Bourbon*, from whence they import great Quantities of Coffee annually to *France*; which although greatly inferior in Quality to the *Arabian*, yet it is conſumed, otherwiſe they would not continue that Branch of Commerce. In the *Britiſh Colonies* of *America*, there have been ſome large Plantations made of Coffee Trees: And it was propoſed to the Parliament, ſome Years paſt, to give proper Encouragement, for cultivating this Commodity in *America*, ſo as to enable the Planters to underſell the Importers of Coffee from *Arabia*, accordingly there was an Abatement of the Duty payable on all the Coffee which ſhould be of the Growth of our Colonies in *America*, which was at that Time ſuppoſed to be a ſufficient Encouragement for the Planters to improve this Branch of Commerce: But the Productions of thoſe Countries, being greatly inferior in Quality to that of *Arabia*, hath almoſt ruined the Project; and unleſs the Planters can be prevailed on to try ſome Experiments, to improve its Quality, there can be little Hope of its becoming a valuable Branch of Trade; therefore I ſhall beg leave to offer my Sentiments on this Article, and ſincerely wiſh what I have to propoſe may be found uſeful for the Inſtruction of the Coffee Planters, for as my Opinion is founded upon Experiments, ſo it is not mere Theory or Suppoſition.

The great Fault of the Coffee which grows in *America*, is the Want of Flavour, or having a diſagreeable one. The Berries are much larger than thoſe which are imported from *Arabia*, and conſequently have not ſo much Spirit or Flavour. This may be owing to ſeveral Cauſes, the firſt is that of its growing in a Soil too moiſt; which is always known to increaſe the Size of Fruit and Vegetables: But their Quality is greatly diminiſhed thereby. The ſecond is from gathering the Berries to ſoon; for I have been credibly informed, that it is the conſtant Practice of the Planters, to gather the Fruit when it is red: At which Time the Berries are much larger, and of greater Weight, than thoſe which are permitted to ripen perfectly on the Trees, which is not till they are turned black, and their outer Pulp becomes dry, and the Skins ſhrink: Then the Berries are much ſmaller than before, and the outer Cover will eaſily ſeparate from the Berry; which I have always been informed, has been the Complaint of the Planters, that this was with great Difficulty and Trouble effected. A third Cauſe I imagine may be in drying the Berries when gathered; which muſt be conſtantly attended to, for they cannot be too much expoſed to the Sun and Air in the Day Time, but they muſt be every Evening removed under Cover, and carefully ſcreened from Dews and Rain; nor ſhould they be placed near any Sort of Liquid or Moiſture, for the Berries are very ſubject to imbibe Moiſture and thereby acquire the Flavour of the Liquid, or if it be pure Water, the Berries will be enlarged, and the Flavour diminiſhed by it, as from many Experiments I can affirm: For a Bottle of Rum being placed in a Cloſet, in which a Caniſter of Coffee Berries cloſely ſtopped, was ſtanding on a Shelf at a conſiderable Diſtance, in a few Days had ſo impregnated the Berries, as to render them very diſagreeable, the ſame alſo has happened by a Bottle of Spirits of Wine ſtanding in the ſame Cloſet with Coffee and Tea, both which were in a few Days ſpoiled by it. Therefore from many Experiments of this Nature, which I have made with Coffee, it appears to me that it ſhould never be brought over in Ships freighted with Rum, nor ſhould the Berries be laid to dry in the Houſes where the Sugars are boiled, or the Rum diſtilled. I have alſo been informed by a Gentleman who has a very good Eſtate in *Jamaica*, and who has lived many Years in that Iſland, that the Planters frequently boil the Coffee Berries before they are dried. As this Information comes from a Gentleman of great Skill and Veracity, I cannot doubt of the Fact, and if ſo, this alone is ſufficient to ſpoil the beſt Coffee in the World; ſo that I am at a loſs to gueſs the Reaſon for this Practice, which, appears to me, can only be intended to increaſe the Weight, therefore muſt be imputed to Avarice, the Bane of every publick Good.

There was ſome Time paſt an imperfect Account, printed in the Papers, of the Cauſe why the *American* Coffee was not ſo good as that which comes from *Arabia*, in which it is ſuppoſed that the Goodneſs of the latter proceeded from the Length of Time which the Berries had been kept: Therefore the Author propoſes that the *American* Coffee Berries ſhould be many Years kept, which he ſays will render them equally good. This is contrary to all the Experience I have had, or can learn, from thoſe who have ſeen the whole Progreſs of Coffee in *Arabia*, with their Manner of drying and packing it to ſend abroad, for two Gentlemen who had lived there ſome Years aſſured me, that the Berries, when firſt gathered, were much better than thoſe which are kept any Time. And a curious Gentleman who reſided in *Barbadoes* two Years, alſo told me, that he never drank better Coffee in any Part of the World, than what he made from the freſh Berries, which he gathered himſelf, and roaſted as he had Occaſion for them, which is alſo confirmed by the Trials which have been made with the Berries which grow in the Stoves in *England*, which make a better flavoured Liquor, than the beſt *Arabian* Coffee Berries which can be procured in *England*; therefore I wiſh thoſe who are inclinable to cultivate theſe Trees in *America*, would make Choice of a Soil rather dry than moiſt, in which the Trees will not make ſo great Progreſs, as thoſe which grow in a wet Soil, nor will the Produce be ſo great; but as the Quality of the Produce, will be ſo much improved, it will certainly be of greater Advantage to them.

The next Thing is, to permit the Berries to remain on the Trees, till their Skins are ſhriveled and turned very black, which it is true will greatly diminiſh their Weight, but then the Commodity will be more than double the Value of that which is gathered ſooner.

When the Berries are fully ripe, they ſhould be gathered when they are perfectly dry, and ſpread abroad on Cloths in the Sun to dry, carrying them every Evening under Cover, to prevent the Dews from falling on them, or the Rain if any ſhould happen: When perfectly dry, they ſhould be carefully packed up in Cloths or Bags, three or four times double, and conſequently kept in a dry Situation: And when they are ſhipped for *England*, it ſhould be on board thoſe Veſſels which have no Rum, leſt the Coffee ſhould imbibe the Flavour; which cannot be prevented when ſtowed in the ſame Place. For ſome

Years paſt, a Coffee Ship from *India*, had a few Bags of Pepper put on Board, the Flavour of which was imbibed by the Coffee, and the whole Cargo ſpoiled thereby.

As the Quantity of Coffee now conſumed in *Britain* is very much increaſed of late Years; it will certainly be worthy of publick Conſideration, how far it may be neceſſary to encourage the Growth of it in the *Britiſh* Colonies: And certainly it deſerves the Attention of the Inhabitants of thoſe Colonies, to improve this Commodity to the utmoſt of their Power; and not to have ſo much regard to the Quantity, as to the Quality of it; for although the former may appear to have the Advantage of the latter in Point of Profit; yet the Goodneſs of every Commodity, muſt always claim the Preference, and thereby will be found of more laſting Advantage, to the Cultivator.

COIX. *Lin. Gen. Plant.* 927. *Lacryma Jobi Tourn. Inſt. R. H.* Job's Tears, *in French, Larmes de Job.*

The *Characters* are,

It hath male and female Flowers on the ſame Plant, the male Flowers are diſpoſed in a looſe Spike, the Chaff of theſe have two Valves, incloſing two Flowers, the Valves are oblong and bearded; the Petal has two oval Valves, the Length of the Chaff with narrow Beards: Theſe have each three hairy Stamina, terminated by oblong four cornered Summits. There are a few female Flowers ſituated at the Baſe of the male Spike in the ſame Plant, theſe have bivalvular Chaff, the Valves are roundiſh, thick, and ſmooth; the Petal hath two oval Valves, the outer being larger and broaded at both Ends. They have a ſmall oval Germen, ſupporting a ſhort Style divided into two Parts, crowned by two horned Stigmas which are longer than the Flower, and covered with fine Hairs; the Germen afterward becomes a hard roundiſh ſmooth Seed.

The *Species* are,

1. Coix *feminibus ovatis. Hort. Cliff.* 434. *Coix* with oval Seeds. This is the *Lacryma Jobi Cluſ.* Job's Tears.

2. Coix *feminibus angulatis. Hort. Cliff.* 438. *Coix* with angular Seeds. This is the *Lacryma Jobi Americana altiſſima, Arundinis folio & facie. Plum.* Talleſt *American* Job's Tears with the Leaf and Appearance of Reed.

The firſt Sort grows naturally in the Iſlands of the *Archipelago*, and is frequently cultivated in *Spain* and *Portugal*, where the poor Inhabitants grind the Grain to Flour in a Scarcity of Corn, and make a coarſe Sort of Bread of it.

This is an annual Plant, which ſeldom ripens its Seeds in *England*, unleſs the Seaſon proves very warm; from a thick fibrous Root is ſent out 2 or 3 jointed Stalks, which riſe near 3 Feet high, garniſhed with ſingle, long narrow Leaves at each Joint, reſembling thoſe of the Reed; at the Baſe of the Leaves come out the Spikes of Flowers, ſtanding on ſhort Foot Stalks; theſe Spikes are compoſed of male Flowers only, and below them is ſituated one or two female Flowers; the male Flowers decay ſoon after they have ſhed their Farina; but the Germen of the female Flowers ſwell to a large oval Seed, which is hard, ſmooth, and of a gray Colour, greatly reſembling the Seeds of *Gromwel*, from whence this Plant has been titled, *Lithoſpermum*.

Thoſe who are deſirous to cultivate this Plant in *England*, may procure the Seeds from *Portugal*, theſe ſhould be ſown on a moderate hot Bed in Spring, to bring the Plants forward, and afterward tranſplant them on a warm Border, allowing each two Feet Room at leaſt, and when the Plants have taken Root, they will require no farther Care, but to keep them clean from Weeds. Theſe will flower about Midſummer, and in warm Seaſons, the Seeds will ripen at *Michaelmas*. There is a Variety of this with much broader Leaves, which I received from *Smyrna* ſome Years paſt, which did not perfect Seeds here, ſo I cannot ſay if it is only a Variety, or a different Sort from this.

The 2d Sort will grow to the Height of 7 or 8 Feet; and the Stems become hard, like the Reed or *Indian* Corn: Theſe branch out, and produce ſeveral Spikes of Flowers; but this Sort will not live in the open Air in *England*, therefore ſhould be planted in the Bark Stove, where it will live through the Winter, and produce ripe Seeds the ſecond Year; and may be continued longer, if deſired.

COLCHICUM. *Lin. Gen. Plant.* 415. *Tourn. Inſt.* Meadow Saffron, in *French Colchique.*

The *Characters* are,

The Flower hath neither Empalement or Spatha; it hath one Petal, riſing with an angular Tube from the Root, and is divided at the Top into ſix oval concave Segments which are erect; it hath ſix Stamina which are ſhorter than the Petal, terminated by oblong Summits having four Valves. The Germen is ſituated in the Root, ſupporting three ſlender Styles the Length of the Stamina, crowned by reflexed channeled Stigmas; the Germen afterward becomes a Capſule with three Lobes, having a Seam on the Inſide, dividing it into three Cells, which contain ſeveral roundiſh rough Seeds.

The *Species* are,

1. Colchicum *foliis planis lanceolatis, erectis Hort. Cliff.* 140. *Colchicum* with plain, erect, Spear-ſhaped Leaves. This is the Common Meadow Saffron.

2. Colchicum *foliis linearibus, patentiſſimis. Lin. Laſ. Sp. Plant.* 342. Meadow Saffron with very narrow, ſpreading Leaves. *Colchicum Montanum anguſtifolium. C. B. P.* 68. Narrow leaved Mountain Meadow Saffron.

3. Colchicum *foliis undulatis patentibus. Hort. Cliff.* 140. Meadow Saffron with waved, ſpreading Leaves. This is the *Colchicum Chionenſe. Mor. Hiſt.* Meadow Saffron of *Chios* with chequered Flowers, like Fritillary, and waved Leaves.

4. Colchicum *floribus fritillariæ inſtar teſſulatis, foliis planis. Mor. Hiſt.* Meadow Saffron with chequered Flowers, like Fritillary, and plain Leaves.

There is a great Variety of theſe which differ in the Colour of their Flowers, and other little Accidents, which are not laſting, ſo muſt not be ranged as diſtinct Species. But as many of them are cultivated in Flower Gardens, I ſhall mention thoſe which I have ſeen cultivated. Theſe are moſt of them ſeminal Variations from the firſt Sort.

The moſt common Meadow Saffron hath a purpliſh Flower.
The Meadow Saffron with white Flowers.
Meadow Saffron with ſtriped Flowers.
Broad leaved Meadow Saffron.
Striped leaved Meadow Saffron.
Many flowered Meadow Saffron.
Meadow Saffron with double purpliſh Flowers.
Meadow Saffron with double white Flowers.

Meadow Saffron with many white Flowers.

The 1ſt Sort grows naturally both in the *Weſt* and *North* of *England*. I obſerved it in great Plenty in the Meadows in *Warwickſhire* in the Beginning of *September*. The Country People call the Flowers Naked Ladies, becauſe they come up naked, without any Leaves or Cover. This hath a bulbous Root, about the Size and Shape of Tulip Roots, but not ſo ſharp-pointed at the Top, the Skin or Cover is alſo of a darker Colour. Theſe Bulbs are renewed every Year, for that which produces the Flowers decays, and a new Root is formed above it. The Flowers come out in Autumn, theſe ariſe with long ſlender Tubes from the Root, about four Inches high, ſhaped like thoſe of the Saffron but are larger; they are of a pale purple Colour, and divided into ſix Parts at the Top, which ſtand erect; the Number of Flowers is generally in Proportion to the Size of the Roots, from 2 to 7 or 8: In *March* the green Leaves appear, theſe are commonly four to a full grown Root; they are folded over each other below, but ſpread open above Ground, ſtanding croſs-ways: They are of a deep green, and when fully grown, are five or ſix Inches long, and one broad. The Seed Veſſel comes out from between the Leaves, in *April*, and the Seeds ripen in *May*, ſoon after which the Leaves decay.

The other Varieties are ſuppoſed to have accidentally riſen from the Seeds of this. So that thoſe who are deſirous to obtain a Variety of theſe Flowers, ſhould propagate them from Seeds, by which Method there may be a greater Variety raiſed.

The 2d Sort grows naturally on the Mountains in *Spain* and *Portugal*. This hath a ſmaller Root than the firſt, and a darker Coat; the Flowers appear in *Auguſt* or *September*; theſe are cut into ſix long narrow Segments, of a rediſh purple Colour, having ſix yellow Stamina. The Leaves of this Sort come up ſoon after the Flowers decay, and continue green all the Winter, like the Saffron; theſe are long, narrow, and ſpread on the Ground; in *June* theſe decay like the firſt Sort.

The 3d and 4th Sorts grow naturally in the *Levant*, but are commonly cultivated in the *Engliſh* Gardens. Theſe flower at the ſame Time as the 1ſt Sort, and the green Leaves come up in Spring. The Root of one of theſe Species is ſuppoſed to be the *Hermodactyl* of the Shops.

Theſe are all very pretty Varieties for a Flower Garden, producing their Flowers in Autumn, when few other Plants are in Beauty: The green Leaves come up in Spring, which are extended to a great Length in *May*, then they begin to decay; ſoon after which Time, is the proper Seaſon to tranſplant their Roots; for if they are ſuffered to remain in the Ground till *Auguſt*, they will ſend forth freſh Fibres; after which it will be too late to remove them. The Roots may be kept above Ground until the Beginning of *Auguſt*; at which Time, if they are not planted, they will produce their Flowers as they lie out of the Ground: But this will greatly weaken their Roots. The manner of planting their Roots being the ſame as Tulips, *&c.* I ſhall forbear mentioning it here, referring the Reader to that Article; and for ſowing the Seeds, by which Means new Varieties may be obtained, I ſhall refer to the Article *Xiphion*; where you will find proper Directions.

COLD ſignifies ſomething devoid of Heat, or which does not contain in it any Particles of Fire; according to which Definition, Cold is a mere negative Term. And this is agreeable to the Sentiments of moſt of our modern Philoſophers, who ſuppoſe Cold to conſiſt in a mere Privation or Diminution of Heat.

Dr. *Clarke* takes Cold to be owing to certain nitrous and other ſaline Particles, endued with particular Figures proper to produce ſuch Effects. Hence Sal-Armoniac, Salt Petre, Salt of Urine, and many other volatile and alkalizate Salts, mixed with Water, increaſe its Degree of Cold very ſenſibly.

Hence alſo comes that popular Obſervation, That Cold prevents Corruption; which, however, muſt not be admitted without an Exception; ſince if a hard porous Body have its Interſtices filled with Water, and this be too much dilated by freezing, the including Body will be burſt. And thus it is that Cold proves deſtructive to the Parts of ſome Plants: As it happened in the Winter, *Anno* 1728. In ſeveral Trees, whoſe Trunks were much expoſed to the South-Weſt, the Sap being thereby rarified by the Warmth of the Sun, which, for ſeveral Days, at the Beginning of the ſevere Froſt, ſhone with an uncommon Heat, and the Nights coming on to extreme Cold, whereby the rarified Sap was ſo ſuddenly condenſed, that the Sap Veſſels could not contain it, and thereby burſt off the Bark of many Trees almoſt from Top to Bottom; and this chiefly on the South-Weſt Side of the Trees; as it did of two large Occidental Plane Trees in the Phyſick Garden at *Chelſea*; and ſeveral Pear, and other Fruit Trees, in the Nurſeries of Mr. *Fran. Hunt* at *Putney*. And thus it is that great Quantities of Trees are rendered ſhaken, and the Timber when cut, of little Value; which is generally the Caſe in very ſevere Winters. In the hard Froſt of the Year 1739-40, there was great Damage done to the Oak-Timber in moſt Parts of *England*, by the Froſt penetrating to the Sap Veſſels of the Trees; and by freezing the Sap, the Veſſels could not contain it, but burſt with great Noiſe; ſo that the Woods reſounded with a Noiſe ſomewhat like the breaking down of the Branches of Trees when they are loping.

Dr. *Boerhaave* ſays, That there is no ſuch Thing in all Nature as abſolute Cold; that the moſt ſevere he had ever known, was in the Year 1728, that then the Water would freeze while it ran down his Hand; and yet even then the Cold was not ſo complete, but that he could make an artificial Cold greater by twelve Degrees.

Though much might be ſaid as to the Effects of Cold on Plants, I ſhall only conclude with the Obſervation of the Rev. Dr. *Hales* who, in the Concluſion of his excellent Treatiſe of *Vegetable Statics*, ſays;

The conſiderable Quantity of Moiſture, which is perſpired from the Branches of Trees during the cold Winter Seaſon, plainly ſhews the Reaſon why, in a long Seaſon of cold North-eaſterly Winds, the Bloſſoms, and tender young-ſet Fruit and Leaves, are, in the early Spring, ſo frequently blaſted, *viz.* by having the Moiſture exhaled faſter than can be ſupplied from the Trees; for, doubtleſs, Moiſture riſes ſlower from the Root, the colder the Seaſon is, though it riſes, in ſome Degree, all the Winter; as is evident, as he ſays, from his ſixteenth Experiment in the ſaid Book.

And from the ſame Cauſe it is, that the leafy Spires of Corn are by theſe cold drying Winds often faded, and turned yellow; which makes the Huſbandman, on theſe Occaſions, wiſh for Snow: which, though it be very cold, yet it not only defends the Root from being frozen, but alſo ſcreens the Corn from theſe drying Winds, and keeps it in a moiſt, florid, ſupple State.

It ſeems therefore to be a reaſonable Direction, which ſome Authors who write on Agriculture and Gardening, give; *viz.* During theſe cold drying Winds, when little Dew falls, to water the Trees in dry Soils, in the bloſſoming Seaſon, and while the young-ſet Fruit is tender; and provided there is no immediate Danger of a Froſt, or in caſe of a continued Froſt, to take care to cover the Trees well, and at the ſame time to ſprinkle them with Water; which is imitating Nature's Method of watering every Part.

As to ſloping Shelters over Wall Trees he ſays; I have often found, that when they are ſo broad, as to prevent any Rain or Dew coming at the Trees, they do more Harm than Good in theſe long eaſterly drying Winds; becauſe they prevent the Rain and Dews falling on them; which would not only refreſh and ſupple them, but alſo nouriſh them: but in caſe of ſharp Froſt after a Shower of Rain, theſe Shelters and other Fences muſt needs be of excellent Uſe to prevent the almoſt total Deſtruction occaſioned by the Freezing of the tender Parts of Vegetables, when they are full-ſaturate with Moiſture.

COLDENIA. *Lin. Gen. Plant.* 159. This Plant was ſo titled by Dr. *Linnæus* in Honour of Dr. *Colden* of *North America*, a very curious Botaniſt, who has diſcovered ſeveral new Plants, not known before.

The *Characters* are,

The Empalement is compoſed of 4 erect Leaves, as long as the Petal. It hath a Funnel-ſhaped Flower of one Petal, ſpreading at the Top, and obtuſe; it hath 4 Stamina, which are inſerted in the Tube of the Petal, terminated by roundiſh Summits; in the Center is ſituated 4 oval Germen, each ſupporting a hairy Style the Length of the Stamina, crowned by permanent Stigmas. The Germen become oval compreſſed rough Fruit, terminated by 4 Beaks; incloſed by the Empalement, each of the Cells containing a ſingle Seed, convex on one Side, and angular on the other.

We know but one *Species* of this Genus, *viz.*

COLDENIA. *Flor. Zeyl.* 69. By Dr. *Plukenet* titled, *Teucri facie biſnagarica tetracoccos roſtrata. Alm.* 363.

This is a Native of *India*, from whence the Seeds have been brought to ſome curious Botanick Gardens. It was ſent me by Dr. *Linnæus*, and is an annual Plant, whoſe Branches trail on the Ground, they extend about ſix Inches from the Root, and divide into many ſmaller Branches, garniſhed with ſhort Leaves ſitting cloſe to the Branches, theſe are deeply crenated on their Edges, and have ſeveral deep Veins, they are of a glaucous Colour, and come out without Order. The Flowers are produced, at the Wings of the Leaves, growing in ſmall Cluſters; theſe have four Stamina, and but one Petal, which is Funnel-ſhaped and cut into four Segments at the Top; they are of a pale blue Colour and very ſmall; when the Flower decays, the Germen becomes a Fruit compoſed of four Cells, wrapped up in the Empalement, each containing a ſingle Seed.

This Plant is propagated by Seeds ſown on a hot Bed in Spring; when the Plants are fit to remove, they ſhould be each put into a ſmall Pot, and plunged into a hot Bed of Tanners Bark, obſerving to ſhade them till they have taken freſh Root, after which they ſhould have Air admitted every Day in Proportion to the Warmth of the Seaſon; and gently watered two or three Times a Week in warm Weather; but they muſt not have too much Moiſture. Theſe Plants muſt remain in the hot Bed, where they will flower in *June*, and the Seeds ripen in *September*.

COLEWORTS. *See* Braſſica.

COLOCASIA. *See* Arum.

COLLINSONIA. *Lin. Gen. Plant.* 38. The Title was given to it by Dr. *Linnæus*, in Honour of Mr. *Peter Collinſon, F. R. S.* a diſtinguiſhed Promoter of Botanical Studies, and the firſt who introduced this Plant among many others, to the *Engliſh* Gardens.

The *Characters* are,

The Flower hath a permanent Empalement of one Leaf, cut into 5 equal Segments at the Top, the 3 upper being reflected, and the 2 under erect. The Flower is Funnel-ſhaped, of one Petal which is unequal, and much longer than the Empalement; cut into 5 Parts at Top, the upper being ſhort and obtuſe, two of them being reflexed the lower Lip or Beard is longer, ending in many Points. It hath 2 long briſtly erect Stamina, terminated by incumbent Summits; it hath a quadrifid obtuſe Germen, with a large Gland, ſupporting a briſtly Style the Length of the Stamina, crowned by a pointed bifid Stigma. The Germen becomes a ſingle roundiſh Seed, ſituated in the Bottom of the Empalement.

We have but one Sort of this Plant, *viz.*

COLLINSONIA *foliis cordatis oppoſitis. Collinſonia* with Heart-ſhaped Leaves growing oppoſite.

This Plant was brought from *Maryland*, where it grows wild; it alſo grows in other Parts of *North-America*, by the Sides of Ditches, and in low moiſt Grounds, where it uſually riſes to the Height of 4 or 5 Feet; but in *England* it ſeldom grows above 3 Feet; and unleſs it be planted in a moiſt warm Situation, or in dry Weather is duly watered, it rarely flowers well; many People keep the Plants in large Pots, for the more convenient watering them: But theſe Plants ſeldom produce good Seeds; whereas thoſe which are planted in the full Ground, and are conſtantly watered, will ripen Seeds very well in good Seaſons.

This hath a perennial Root, and an annual Stalk, which decays in Autumn, and freſh Shoots come out in Spring. The Stalks are ſquare and are garniſhed with Heart-ſhaped Leaves; placed oppoſite by Pairs, which are ſawed on their Edges. The Flowers are produced at the Extremity of the Stalks, in looſe Spikes, theſe have long Tubes, and are divided into five Parts at the Top, they are of a purpliſh yellow, and the lower Segment is terminated by long Hairs. The Flowers appear in *July*, and the Seeds ripen in Autumn.

This Plant may be eaſily propagated by parting the Roots in *October*. Theſe ſhould be planted at 3 Feet Diſtance; for their Roots require much Nouriſhment, otherwiſe they will not thrive. It will live in the open Ground, if planted in a ſheltered Situation.

COLLOCOCCUS. *Brown. Hiſt. Jam.* 167. *Ceraſo. affinis. Sloan. Hiſt.* 2. p. 95. The Clammy Cherry.

The *Characters* are,

The Flower has a ſmall, Bell-ſhaped, permanent Empalement; it has one Petal, which is twice the Length of the Empalement, and is cut almoſt to the Bottom into 5 oval Segments; it has 5 hairy Stamina faſtened to the Tube of the Empalement, ſituated between the Segments of the Petal, and terminated by Heart-ſhaped Summits; an oval Germen ſupporting a ſingle Style, which divides into 4 Parts at the Top which ſpread aſunder, and are crowned by oblong irregular Stigmas. The Germen afterwards becomes a roundiſh Berry full of a clammy Juice, incloſing a rugged Stone with two Lobes or Cells.

The *Species* are,

1. Collococcus *foliis oblongo-ovatis rugoſis venoſis, floribus laxè racemoſis. Brown. Hiſt. Jam.* 167. *Collococcus* with oblong, oval, rough, veined Leaves, and Flowers growing in looſe Bunches. This is the *Ceraſa Americana, rugoſis foliis, fructu viſcoſo. Pluk. Tab.* 158. f. 1. *American* Cherry, with rough Leaves, and a clammy Fruit, called Clammy Cherry.

2. Collococcus *platyphyllus major, racemis umbellatis. Brown. Hiſt. Jam.* 168. Greater *Collococcus* with broad Leaves, and branching Umbels. This is the *Prunus racemoſa, foliis oblongis hirſutis maximis, fructu rubro. Sloan. Cat. Jam.* 184. The broad-leaved Cherry.

The 1ſt Sort grows naturally in *Jamaica*, and other Iſlands in the *Weſt-Indies*, where it riſes with a ſtrait Trunk to the Height of 30 or 40 Feet, ſending out Branches by Threes at each Diviſion; they are covered with a dark gray Bark, and garniſhed with oblong Leaves which are rough and veined; they are 5 or 6 Inches long, and 2 and a Half broad, ſtanding on ſhort Foot Stalks. The Flowers are produced in looſe Bunches at the Ends of the Branches; theſe are ſucceeded by ſpherical Berries of a ſcarlet Colour full of a clammy Juice, incloſing a rugged Stone.

The 2d Sort grows naturally in *Jamaica*, where it riſes to the Height of 50 Feet. The Bark of the Stem is furrowed and gray; the Branches are crooked; the Leaves are a Foot and a Half long, and 8 or 9 Inches broad; they are rough and downy, and ſtand on ſhort Foot Stalks. The Flowers are produced in looſe Bunches at the End of the Branches, which are ſucceeded by oval Berries about the Size of ſmall Cherries.

The 1ſt Sort has been ſeveral Years in the Gardens of the Curious, where it has riſen to the Height of 10 or 12 Feet, but has not produced either Flowers or Fruit in *England* ſo far as I can learn. The 2d Sort is at preſent very rare in this Country.

They are propagated by Seeds, which muſt be procured from the *Weſt-Indies*. Theſe ſhould be ſown in Pots, and plunged in a hot Bed of Tan; when the Plants come up, they ſhould be treated in the ſame Way as the *Malpighia*, with whoſe Culture theſe Plants will thrive very well, to which the Reader is deſired to turn.

COLOCYNTHIS. *See* Cucurbita.

COLUMBINE. *See* Aquilegia.

COLUMNEA. *Plum. Nov. Gen.* 28. *Tab.* 33. *Lin. Gen. Plant.* 710. The Title was given to it by *Plumier*, in Honour of *Fabius Columna*, a Nobleman of *Rome*, who has publiſhed two curious Books of Botany.

The *Characters* are,

The Flower hath a permanent Empalement of one Leaf, cut into 5 Parts at the Top; it hath one Petal, of the (ringent) or grining Kind, having a long ſwelling Tube, divided above into two Lips, the upper being erect, concave, and intire, the lower is divided into 3 Parts which ſpread open: It hath 4 Stamina, two being longer than the other; theſe are incloſed in the upper Lip, and are terminated by ſingle Summits. In the Center is ſituated the roundiſh Germen, ſupporting a ſlender Style, crowned by a bifid acute Stigma. The Germen becomes a globular Berry with two Cells, ſitting on the Empalement, and is of the ſame Magnitude, containing ſeveral oblong Seeds.

There is but one *Species* of this Genus known, *viz.*

Columnea. *Lin. Sp. Plant.* 638. This is the *Columnea ſcandens, phœniceo flore, fructu albo Plum. Nov. Gen.* 28. Climbing *Columnea* with a ſcarlet Flower, and a white Fruit. *Plumier* mentions a Variety, with a yellowiſh Flower and white Fruit. But this is only a Variation ſuppoſed to have riſen from the Seeds of the firſt.

I received Seeds of the 1ſt Sort from *Carthagena* in *New Spain*, where the Plants grew naturally. This hath a climbing Stalk, which faſtens to the neighbouring Plants whereby it is ſupported. The Leaves are oval, ſawed on the Edges, and ſtand on ſhort Foot Stalks, theſe and alſo the Stalks are very hairy; but the Plants decayed the following Year, before they produced any Flowers, ſo I can give no Deſcription of them.

Theſe Plants are Natives of the warmeſt Parts of *America*; ſo are too tender to live in *England*, unleſs preſerved in the Stove. They are propagated by Seeds, which muſt be ſown in a good hot Bed; when the Plants come up, they muſt be treated as other tender exoticks, which are kept in the Bark Stove.

COLUTEA. *Tourn. Inſt. R. H.* 649. *Lin. Gen. Plant.* 776. Bladder Sena, in *French*, *Baguenaudier*.

The *Characters* are,

The Flower hath a Bell-ſhaped permanet Empalement of one Leaf, indented in 5 Parts. The Flower is of the Butterfly Kind. The Standard, Wings, and Keel, vary in their Figure in different Species. It hath 10 Stamina, 9 of which are joined, and the other ſtands ſeparate, which are terminated by ſingle Summits. In the Center is ſituated an oblong compreſſed Germen, ſupporting a riſing Style, crowned by a bearded Line, extended from the Middle of the upper Part of the Style. The Germen becomes abroad ſwollen Pod with one Cell, including ſeveral Kidney-ſhaped Seeds.

The *Species* are.

1. Colutea *arborea, foliolis obcordatis. H. C.* Tree Bladder Sena with the ſmaller Leaves Heart-ſhaped. *Colutea veſicaria. C. B. P.* Common Bladder Sena.

2. Colutea *foliolis ovatis integerrimis, caule fruticoſo.* Shrubby Bladder Sena with oval entire Leaves.

3. Colutea *foliolis cordatis minoribus, caule fruticoſo.* Bladder Sena with ſmaller Heart-ſhaped Leaves, and a ſhrubby Stalk. This is the *Colutea Orientalis flore ſanguinei coloris, luteâ maculâ notata. Tourn.* Eaſtern Bladder Sena with a Blood-coloured Flower, ſpotted with yellow.

4. Colutea *foliolis ovato-oblongis. Hort. Cliff.* 366. Shrubby Bladder Sena with oblong oval Leaves. This is the *Colutea Æthiopica flore phœniceo, folio Barbæ Jovis. Breyn. Cent.* 1. 73. *Æthiopian* Bladder Sena with a ſcarlet Flower, and a Jupiter's Beard Leaf.

5. Colutea *foliolis ovatis, emarginatis, leguminibus oblongis compreſſis acuminatis, caule arboreo.* Bladder Sena

with oval Leaves indented at the Top, oblong, compreſſed, pointed Pods, and a Tree-like Stalk. Dr. *Plukenet* titles it *Colutea Veræ Crucis veſicaria. Alm.* 111. *Pl.* 165. *f.* 3. Bladder Sena of *Vera Cruz.*

6. Colutea *herbacea foliis linearibus. Hort. Up.* 266. Herbaceous Bladder Sena with narrow Leaves. This is the *Colutea Africana annua, foliolis parvis, mucronatis, veſiculis compreſſis. Hort. Amſt. African* annual Bladder Sena with ſmall pointed Leaves, and compreſſed Pods.

7. Colutea *caulibus procumbentibus, foliolis ovato-linearibus, tomentoſis, floribus alaribus pedunculis longiſſimis.* Bladder Sena with trailing Stalks, oval narrow Leaves, which are woolly, and Flowers growing from the Sides of the Stalks with very long Foot Stalks.

The 1ſt Sort is commonly cultivated in the Nurſery Gardens, as a flowering Shrub, to adorn Plantations. This grows naturally in *Auſtria*, the South of *France* and *Italy*, from whence the Seeds were originally brought to *England*; this hath ſeveral woody Stems, which grow to the Height of 12 or 14 Feet, ſending out many woody Branches, garniſhed with winged Leaves, compoſed of 4 or 5 Pair of oval Leaves placed oppoſite, and terminated by an odd one; theſe are indented at the Top, and of a grayiſh Colour. The Flowers come out from the Wings of the Leaves upon ſlender Foot Stalks, about two Inches long, each ſuſtaining two or three Flowers of the Butterfly Kind, whoſe Standard is reflexed and large. The Flowers are yellow, with a dark-coloured Mark on each Petal; theſe are ſucceeded by inflated Pods, an Inch and a Half long, having a Seam on the upper Side, containing a ſingle Row of Kidney-ſhaped Seeds, faſtened to a Placenta. It flowers in *June* and *July*, and the Seeds ripen in Autumn. There is a Variety with reddiſh Pods, which is equally common in the Gardens, and is ſuppoſed to be only accidental, for the Plants do not differ in any other Part.

The Seeds of the 2d Sort were brought from the *Levant* by the Reverend Dr. *Pocock*, which ſucceeded in the Garden at *Chelſea*, and ſince Dr. *Ruſſel*, who reſided many Years at *Aleppo*, brought over dried Samples of this Sort, which he aſſures me grow common near that City. This ſeldom grows more than 6 or 7 Feet high; the Branches are very ſlender, and ſpread out on every Side; theſe are garniſhed with winged Leaves, compoſed of 9 Pair of ſmall, oval, entire Lobes, terminated by an odd one; the Flowers ſtand upon ſlender Foot Stalks about the ſame Length of the former. The Flowers are alſo like thoſe, but are of a brighter yellow. This Sort begins to flower early in *May*, and continues flowering till the Middle of *October*.

The 3d Sort was diſcovered by Dr. *Tournefort* in the *Levant*, from whence he ſent the Seeds to the Royal Garden at *Paris*, where they ſucceeded, and ſince have been communicated to moſt of the curious Gardens in *Europe*. This hath a woody Stem, which ſends out many Branches on every Side, and riſes about 7 or 8 Feet; theſe are not ſo ſtrong as thoſe of the firſt Sort, and are garniſhed with winged Leaves, compoſed of 5 or 6 Pair of ſmall Heart-ſhaped Lobes, terminated by an odd one. The Flowers proceed from the Side of the Branches, ſtanding on Foot Stalks, each ſuſtaining 2 or 3 Flowers, ſhaped like thoſe of the firſt Sort, but ſmaller; they are of a dark red Colour, marked with yellow, and appear in *June*; the Seeds ripen in Autumn.

The 4th Sort grows naturally in *Æthiopia*. This hath a weak ſhrubby Stalk, which ſends out many Side Branches growing erect, and garniſhed with equal winged Leaves, compoſed of 10 or 12 Pair of ſmall, oval, oblong, hoary Lobes. The Flowers are produced at the upper Part of the Branches, from the Wings of the Leaves, each Foot Stalk ſuſtaining 3 or 4 ſcarlet Flowers, longer than thoſe of the other Sorts, but not reflexed; theſe are ſucceeded by inflated Pods, containing one Row of Kidney-ſhaped Seeds. The uſual Time of its Flowering is in *June*, but when the Seeds are ſown early in the Spring, the Plants frequently flower the following Autumn.

The 5th Sort was ſent me from *La Vera Cruz*, in *New Spain*, in 1730. This hath a ſhrubby Stalk, which riſes to the Height of 12 or 14 Feet, ſending out many Branches, garniſhed with winged Leaves, compoſed of three Pair of oval Lobes, terminated by an odd one; theſe are indented at the Top, and of a light green. The Flowers are of a bright yellow, and ſtand two or three upon each Foot Stalk; theſe are ſucceeded by compreſſed Pods near four Inches long, which end in long Points.

The 6th Sort grows naturally at the *Cape of Good Hope*. This is an annual of little Beauty, ſo is rarely cultivated but in Botanick Gardens for Variety. This riſes with a ſlender herbaceous Stalk about a Foot high, dividing upward into three or four Branches, garniſhed with winged Leaves, compoſed of 5 or 6 Pair of very narrow Lobes, near an Inch long, which are a little hoary. The Flowers are ſmall, of a purpliſh Colour, ſtanding 3 together on ſlender Foot Stalks, and ſucceeded by flat oval Pods, each containing 2 or 3 Kidney-ſhaped Seeds. It flowers in *July*, the Seeds ripen in Autumn, and the Plant decays ſoon after.

The Seeds of the 7th Sort were ſent me from the *Cape of Good Hope*, in 1753, which have ſucceeded in the Garden at *Chelſea*. This Plant hath many ſlender herbaceous Stalks, which trail on the Ground, and are divided into many ſmaller Branches, garniſhed with winged Leaves, compoſed of 12 or 14 Pair of ſmall, narrow, oval Lobes, terminated by an odd one; theſe, and alſo the Stalks, are covered with a whitiſh Down. The Flowers are very ſmall, of a purple Colour, and ſtand upon very long ſlender Foot Stalks, each ſuſtaining 3 or 4 Flowers; theſe are ſucceeded by compreſſed Pods little more than Half an Inch long, which are a little bent like a Sickle, each containing a ſingle Row of ſmall Kidney-ſhaped Seeds. It flowers in *June* and *July*, and the Seeds ripen in Autumn. This is a perennial Plant, which, if ſheltered in Winter, will continue ſeveral Years, but the Branches do not extend more than a Foot in Length, and unleſs they are ſupported, always trail upon the Ground.

The three firſt mentioned Sorts are very hardy Shrubs, which thrive in the open Air extremely well, ſo are generally propagated for Sale in the Nurſery Gardens, but the 1ſt Sort hath been long in *England*, ſo is more generally known and propagated, than either of the other, which have been but few Years in the *Engliſh* Gardens. The 3d Sort is not mentioned in any of the Botanick Books, but as the Seeds ripen here very well, in a few Years it may be in as great Plenty as the firſt Sort.

Theſe are propagated by ſowing their Seeds any

Time in Spring, in a Bed of common Earth; and when the Plants come up, they muſt be kept clear from Weeds; the *Michaelmas* following they ſhould be tranſplanted either into Nurſery Rows, or in Places where they are deſigned to remain; for if they are let grow in the Seed Bed too long, they are very ſubject to have downright Tap Roots, which renders them unfit for Tranſplantation; nor ſhould they be ſuffered to remain too long in the Nurſery before they are tranſplanted, for the ſame Reaſon.

The 1ſt Sort is very proper to intermix with Trees of a middling Growth in Wilderneſs Quarters, or in Clumps of flowering Trees, where the Oddneſs of their Flowers and Pods will make a pretty Variety, eſpecially as they continue a long Time in flower; for they uſually begin flowering by the End of *May*, and from that Time to *September*, are ſeldom deſtitute of Flowers.

Theſe Trees make great Shoots annually, which are frequently broken down by ſtrong Winds in Summer, ſo that if not ſheltered by other Trees, their Branches ſhould be ſupported, otherwiſe they will be broken, and ſplit off, whereby the Trees will be rendered unſightly.

The 3d Sort does not grow ſo tall as the common, but makes a more regular Shrub. The Flowers are of a duſky red Colour, ſpotted with yellow, ſo it makes a very pretty Variety, and being as hardy as the common Sort, may be propagated by Seeds in the ſame Manner.

The 4th Sort is tender, ſo will not bear ſevere Winters in the open Air in *England*; but, in mild Winters, if planted in a dry Soil, and warm Situation, they will thrive very well; and thoſe Plants which live abroad, will flower much ſtronger, and make a finer Appearance, than thoſe which are preſerved in the Green-houſe, for theſe Plants require a large Share of Air, otherwiſe they are apt to draw up weak, ſo ſeldom produce their Flowers in Plenty; therefore when any of the Plants are ſheltered in Winter, they muſt be placed as near the Windows as poſſible, that they may have all the Advantages of Air; and in Spring they muſt be hardened to bear the open Air as ſoon as poſſible.

This Sort is propagated by Seeds as the former; if they are ſown early in Spring, upon a warm Border of light Earth, the Plants will flower in *Auguſt*; and, if the Autumn proves favourable, will ripen their Seeds very well; but ſome ſow the Seeds upon a moderate hot Bed in Spring, whereby they bring the Plants ſo forward as to flower in *July*, and the Seeds are always perfected from theſe Plants; but they ſhould always be tranſplanted while young, for they do not bear removing well when they are large. This Sort will ſometimes live in the open Air for 3 or 4 Years, when they ſtand in a well ſheltered Situation; and theſe will grow to have large Heads, and make a fine Appearance when in flower; they will alſo continue much longer in Beauty than thoſe which are treated more tenderly.

The 5th Sort grows naturally in a warm Country, ſo is too tender to thrive here in the open Air, this is propagated by Seeds, which muſt be ſown on a hot Bed in Spring, and when the Plants are 2 Inches high, they ſhould be each tranſplanted into a ſmall Pot, filled with light Earth, and then plunged into a hot Bed of Tanners Bark, obſerving to ſhade them till they have taken freſh Root, after which they muſt be treated as other Plants from the ſame Climate, always keeping them in a Stove of a moderate Temperature of Heat.

The 6th Sort is a low annual Plant, ſeldom growing more than 18 Inches high; the Flowers being ſmall, and having little Beauty, it is ſeldom preſerved but in Botanick Gardens; the Seeds of this muſt be ſown upon a moderate hot Bed in Spring; and the Plants put into ſmall Pots, and brought forward in another hot Bed; in *July* they will flower, when they may be expoſed to the open Air, in a warm Situation, where the Seeds will ripen in *September*, and the Plants ſoon after decay.

The 7th Sort may be raiſed on a moderate hot Bed in Spring, and afterward expoſed to the open Air in Summer, but in Winter they muſt be ſheltered under a Frame, otherwiſe the Froſt will deſtroy them.

COLUTEA SCORPIOIDES. *See* Emerus.

COLLIFLOWER. *See* Braſſica.

COMA AUREA. *See* Chryſocoma.

COMARUM. *Lin. Gen. Plant.* 563. *Pentaphylloides. Tourn. Inſt. R. H.* 298. Marſh Cinquefoil.

The *Characters* are,

The Flower hath a large ſpreading Empalement of one Leaf, divided into 10 *Parts at the Top, which is coloured. It hath five oblong Petals, which are inſerted in the Empalement, but are much ſmaller. It hath* 20 *permanent Stamina, which are inſerted into the Empalement, and are terminated by Moon-ſhaped Summits. It hath a great Number of ſmall roundiſh Germen collected into a Head, having ſhort ſingle Styles ariſing from their Sides, which are cd crowned by ſingle Stigmas. The common Receptacle becomes a large fleſhy Fruit, having many pointed Seeds adhering to it.*

We know but one diſtinct *Species* of this Genus, *viz.*

COMARUM. *Fl. Lapp.* 214. This is the *Pentaphylloides paluſtre rubrum. Inſt. R. H.* 298. Red Marſh Baſtard Cinquefoil, and the *Quinquefolium paluſtre rubrum. C. B. P.* 326. Red Marſh Cinquefoil.

There is a Variety of this, which grows plentifully in *Ireland*, and alſo in the North of *England*, from whence I have procured many of the Plants, which after one Year's Growth in the Garden, have been ſo like the common Sort, as not to be diſtinguiſhed from it, ſo that the different Appearance which it has in the Places where it grows naturally, may be ſuppoſed to ariſe from the Soil and Situation. This is by Dr. *Plukenet*, titled *Pentaphyllum paluſtre rubrum, craſſis & villoſis foliis Suecicum, & Hibernicum. Alm.* 284. Red Marſh Cinquefoil of *Sweden* and *Ireland*, with thick and hairy Leaves.

This Plant hath creeping woody Roots, which ſend out many black Fibres, penetrating deep into the Ground, from which ariſe many rediſh Stalks, about two Feet high, which generally incline to the Ground; theſe are garniſhed at each Joint with one winged Leaf, compoſed of 5, 6, or 7 Lobes, which riſe above each other, the Middle being the largeſt; the lower diminiſhing, and with their Baſe embrace the Stalks; theſe are deeply ſawed on their Edges, ſmooth above, of a light green, and hoary on their under Side. The Flowers are produced at the Top of the Stalks, 3 or 4 together on ſhort Foot Stalks; theſe have a large ſpreading Empalement, which is red on the upper Side, and divided at the Top into 10 Parts; in the Center ſits the five Petals, which are red, and not more than a 3d Part the Size of the Empalement; within theſe are ſituated many Germen, attended by about 20 Stamina, terminated by dark Summits. After the Flower is paſt, the Receptacle which ſits in the Bottom of the Empalement, becomes a fleſhy Fruit, ſomewhat like a Strawberry, but flatter, including a great Number of pointed Seeds. It flowers in *July*, and the Seeds ripen in Autumn.

As theſe Plants are Natives of Bogs, they are with Difficulty preſerved in Gardens, for they muſt be planted in a Soil as near to that of their natural Growth as poſſible, they are very apt to ſpread much at the Root, when in a proper Situation; ſo whoever is inclinable to preſerve theſe Plants, may remove them from the Places of their Growth in *October*; and if they are planted on a Bog, there will be no Danger of ſucceeding. There are a few of theſe now growing upon a Bog at *Hampſtead*, which were planted there ſome Years ago; but the neareſt Place to *London*, where they grow wild in Plenty, is in the Meadows near *Guilford* in *Surry*.

COMMELINA. *Lin. Gen. Plant.* 58. *Plum. Nov. Gen.* 48. *Tab.* 38. *Zanonia. Plum. Nov. Gen.* 38. *Tab.* 38. This Plant was ſo called by Father *Plumier*, from Dr. *Commeline*, a famous Profeſſor of Botany at *Amſterdam*.

The *Characters* are,

It hath a permanent Spatha, which is large, Heart-ſhaped, compreſſed, and ſhut together. The Flower hath 6 concave Petals, 3 or 4 of which are ſmall and oval, (theſe are frequently taken for the Empalement) the others are large, roundiſh, and coloured. It hath 3 Nectariums, (which have been ſuppoſed to be Stamina); theſe have proper Stamina, which ſit horizonal, and are ſhaped like a Croſs. There are 3 Awl-ſhaped Stamina, which recline, and ſit about thoſe of the Nectarium, which are terminated by oval Summits. In the Center is ſituated a roundiſh Germen, ſupporting a twining Style, crowned by a ſingle Stigma. The Germen becomes a naked globular Capſule, with 3 Furrows, having 3 Cells, each containing 2 angular Seeds.

The *Species* are,

1. Commelina *corollis inæqualibus, foliis ovato-lanceolatis, acutis, caule procumbente, glabro. Hort. Upſal.* 18. *Commelina* with unequal Petals, oval, Spear-ſhaped, pointed Leaves, and a ſmooth trailing Stalk. This is the *Commelina procumbens annua, ſaponariæ folio. Hort. Elth.* Annual trailing *Commelina* with a Sopewort Leaf.

2. Commelina *corollis inæqualibus, foliis ovato-lanceolatis, caule erecto, ſcabro, ſimpliciſſimo. Hort. Upſal.* 18. *Commelina* with unequal Petals, oval Spear-ſhaped Leaves, with a ſingle, upright, rough Stalk. This is the *Commelina erecta, ampliora ſubcæruleo flore. Hort. Elth.* 94. Upright *Commelina* with a larger bluiſh Flower.

3. Commelina *corollis inæqualibus, foliis laceolatis, glabris, obtuſis, caule repente. Lin. Sp. Plant.* 41. *Commelina* with unequal Petals, ſmooth, Spear-ſhaped, obtuſe Leaves, and a creeping Stalk. This is the *Commelina procumbens, flore luteo. Prod. Leyd.* 538. Trailing *Commelina* with a yellow Flower.

4. Commelina *corollis æqualibus, foliis ovato-lanceolatis, ſubciliatis. Hort. Upſal.* 18. *Commelina* with equal Petals and oval Spear-ſhaped Leaves, hairy on their under Side. This is the *Commelina radice anacampſerotidis. Hort. Elth.* 94. *Commelina* with a Root like Orpine.

5. Commelina *corollis æqualibus pedunculis incraſſatis, foliis lineari-lanceolatis. Lin. Sp. Pl.* 41. *Commelina* with equal Petals, thick Foot Stalks, and narrow Spear-ſhaped Leaves. This is the *Zanonia graminea perfoliata. Plum.* Perfoliate *Zanonia* with Graſs Leaves.

There are ſome others of this Genus, but thoſe here enumerated, are all I have ſeen in *England*.

The 1ſt Sort grows naturally in the Iſlands in the *Weſt-Indies*, and in *Africa*; this is an annual Plant, which hath ſeveral trailing Stalks, near 2 Feet long, theſe put out Roots at the Joints, which ſtrike into the Ground; at each Joint is placed one oval, Spear-ſhaped Leaf, ending in a Point, which embraces the Stalk with its Baſe, and hath ſeveral longitudinal Veins: They are of a deep green, and ſmooth. The Flowers come out from the Boſom of the Leaves, included in a Spatha, which is compreſſed and ſhut up, each having 2 or 3 Flowers, ſtanding upon ſhort Foot Stalks, they are compoſed of 2 large blue Petals, and 4 ſmaller green ones, which have generally been termed the Empalement of the Flower; within theſe are ſituated 3 Nectariums, each having a ſlender Stamina fixed on the Side, theſe ſurround the Germen, which becomes a roundiſh Capſule having 3 Cells, in each of theſe is lodged two angular Seeds. It flowers in *June* and *July*, and the Seeds ripen in Autumn. This was titled, *Ephemeron flore dipetalo*, by ſome of the older Writers in Botany.

The 2d Sort grows naturally in *Penſylvania*, from whence I received the Seed; this hath a perennial Root compoſed of many white Fibres, the Stalks riſe 18 Inches high, are upright, rough, herbaceous, and about the Size of Quills, theſe have a ſingle Leaf at each Joint, which are ſhaped like thoſe of the firſt Sort, and embrace the Stalks with their Baſe, the Flowers come out from the Boſom of the Leaves at the upper Part of the Stalk, ſitting upon ſhort Foot Stalks; theſe are of a pale bluiſh Colour, and are ſucceeded by Seeds as the firſt Sort. This flowers about the ſame Time with the firſt, but the Seeds do not often ripen in *England*.

The 3d Sort grows naturally in *Africa*; this hath a fibrous Root, which ſends out many trailing Stalks 3 Feet long, theſe ſend out Roots at every Joint, and from them many more Shoots are produced, ſo that where the Plants are in a proper Degree of Warmth, and have Room to ſpread, they will cover a large Surface of Ground. The Leaves are very like thoſe of the firſt; but the Flowers are larger and of a deep yellow; the Petals are Heart-ſhaped, and the Seed Veſſels are larger. This flowers in *July*, and the Seeds ripen in Autumn.

The 4th Sort grows naturally near old *Vera Cruz* in *New Spain*, from whence the Seeds were ſent me. This hath a thick fleſhy Root compoſed of ſeveral Tubes, ſomewhat like thoſe of the Ranunculus, ſeveral joining together at the Top, where they form a Head, and diminiſh gradually downward; from this ariſe one or two inclining Stalks, which ſend out Side Branches, from their lower Parts; theſe are garniſhed with oval, Spear-ſhaped Leaves, Part of which have long Foot Stalks, the others embrace the Stalks with their Baſe, they have ſhort Hairs on their under Side, and toward the Stalk, but are ſmooth above, of a deep green Colour, and cloſe every Evening, or in cold Weather. The Flowers are produced toward the upper Part of the Stalks, from the Boſom of the Leaves, ſtanding upon ſlender Foot Stalks; theſe are compoſed of 3 blue Petals pretty large and roundiſh, and 3 ſmaller which are green; the Seeds are like thoſe of the other Sorts. It flowers in *June*, *July*, and *Auguſt*, and the Seeds ripen in Autumn, ſoon after which the Stalks decay, but the Roots may be preſerved 2 or 3 Years.

The 5th Sort grows naturally in the *Weſt-Indies*, the Seeds were ſent me from the Iſland of *Barbuda*. This hath trailing Stalks like the firſt, garniſhed with narrow graſſy Leaves, embracing the Stalks, with their Baſe; the Flowers are produced at the End of the Stalks, upon thick Foot Stalks, 3 Flowers generally ſitting on each. They have 3 equal large Petals of a Sky Blue, and 3 ſmaller which are green. Theſe flower in *July* and *Auguſt*, but have not perfected Seeds in *England*.

All the Sorts are propagated by Seeds; the firſt will come if ſown in the full Ground; but if the Seeds are ſown upon a warm Border of light Earth in Autumn, the Plants will riſe early in Spring; ſo from theſe good Seeds may be expected if the Seaſon proves favourable, whereas thoſe which are ſown in Spring, often lie long in the Ground, and rarely ripen their Seed. Theſe Plants have but little Beauty, ſo that 2 or 3 of each Sort, is ſufficient; if the Seeds are ſown in Autumn where the Plants are deſigned to remain, or the Seeds permitted to ſcatter, the Plants will require no Care but to keep them clear from Weeds.

The 2d Sort hath a perennial Root; this ſeldom ripens Seeds in *England*, but the Roots ſend out Offſets, by which it is eaſily propagated. This is too tender to live in the open Air in Winter, therefore ſhould be planted in Pots, and ſheltered under a common Frame, and expoſed abroad in Summer; the beſt Time to tranſplant and part theſe Roots is about the End of *March*.

The other Sorts are tender, ſo their Seeds muſt be ſown on a moderate hot Bed in Spring, and when the Plants are two Inches high, they ſhould be tranſplanted to a freſh hot Bed to bring them forward; when they have taken freſh Root, they ſhould have a large Share of freſh Air every Day in warm Weather, to prevent their growing weak, and in *June* they may be carefully taken up and tranſplanted on a warm Border of light Earth, obſerving to ſhade them till they have taken freſh Root, after which they will require no other Care, but to keep them clean from Weeds. With this Management the Plants will flower and produce good Seeds.

The 3d and 4th Sorts may be continued, if they are planted in Pots, and placed in the bark Stove in Autumn; or if the Roots of the 4th Sort are taken out of the Ground in Autumn, and kept in a warm Place in Winter, they may be planted on a hot Bed in Spring to forward their ſhooting, and theſe will produce ſtronger Plants than thoſe which riſe from Seeds.

COMMONS and COMMON-FIELDS. *See* Land.

COMPARTMENTS are Beds, Plats, Borders, and Walks, laid out according to the Form of the Ground, and Ingenuity of the Artiſt, and depend more on a good Fancy than any Rules. Theſe are Diverſities in Knots, Flower Gardens, or Parterres, of which there are great Variety, and may be diverſified infinitely, according to the Fancy of the Deſigner.

Plain Compartments are Pieces of Ground divided into equal Squares and Flower Beds, marked out by the Line, of equal Length and Breadth.

Some Perſons allow to theſe Squares, Borders of 2 Feet in Breadth, and not more, if the Plat of Ground be ſmall; but if they be reaſonably large, 3 Feet; and they edge the Borders with Box, or upright hardy Thyme, or ſome other aromatick Herbs or Flowers, for the Sake of the greater Neatneſs.

In order to preſerve the Paths and Alleys firm, even, and durable, they lay them with a Coat of Sand or Gravel, 2 or 3 Inches thick, keeping them hoed and weeded as often as there is occaſion.

Theſe were much eſteemed by the *French*, whoſe Gardens were all laid out into ſeveral Compartments, Salons, Boſquets, *&c.* after the Manner of Architects in Buildings; but theſe ſtiff, unnatural Gardens are now juſtly exploded, and a much better Taſte has of late prevailed in the *Engliſh* Gardens.

COMPOSTS in Huſbandry and Gardening ſignify ſeveral Sorts of Soils or earthy Matter mixed together, in order to make a Manure for aſſiſting the natural Earth in the Work of Vegetation, by way of Amendment or Improvement.

Compoſts are various, and ought to be ſo, according to the different Nature or Quality of the Soils which they are deſigned to meliorate: And according as the Land is either light, ſandy, looſe, heavy, clayey, or cloddy. A light looſe Land requires a Compoſt of a heavy Nature, as the Scouring of deep Ditches, Ponds, *&c.*

So on the other hand, a Land that is heavy, clayey, or cloddy, requires a Compoſt of a more ſprightly and fiery Nature, that will inſinuate itſelf into the lumpiſh Clods; which if they were not thus managed, would very much obſtruct the Work of Vegetation.

The great Uſe of Compoſts is for ſuch Plants as are preſerved in Pots or Tubs; or in ſmall Beds or Borders of Flower Gardens; which is what I ſhall here mention, and ſhall treat of thoſe Compoſts or Dreſſings, which are uſed in Gardens and Fields, under the Articles of Dung and Manure.

As ſome Plants delight in a rich light Soil, others in a poor ſandy Soil, and ſome in a loamy Soil; ſo there ſhould be different Compoſts prepared, in all thoſe Gardens, where a great Variety of Plants are cultivated: And this is much more neceſſary in Countries at a great Diſtance from *London*; than in the Neighbourhood of it, becauſe there is ſo great Variety of Lands, within 10 Miles round *London*, which have been ſo long dreſſed, and cultivated, that a Supply of Earth fit for all Sorts of Plants, may be eaſily procured; but in ſome Places which are at a Diſtance from large Towns, it is very difficult to procure a Quantity of Earth proper for the choicer Sort of Flowers and Plants; therefore the Compoſts will require more Care, and ſhould be mixed a conſiderable Time longer before they are uſed; that they may have the Advantage of Heat and Cold, to meliorate and improve them; and ſhould be frequently turned over, that the Parts may be well mixed and incorporated, and the Clods well broken and divided.

Almoſt every one who hath written on this Subject, hath directed the upper Surface of Earth from a Paſture Ground, for one of the principal Ingredients, in moſt Compoſts for Plants; which is certainly a very good one provided it has Time to meliorate before it is uſed; for if this is mixed up haſtily, aud put into Pots or Tubs, before it has had a Winter's Froſt, and Summer's Heat, to looſen the Parts effectually; it will unite and cake together, ſo hard, as to ſtarve the Plants that are put into it. For all Earth when put into Pots or Tubs, is much more apt to bind, than when it is in Beds; therefore ſhould be in Proportion made looſer, according to the Nature of the Plants for which it is deſigned, than when it is intended for Beds or Borders. So that if this Earth from a Paſture, cannot be prepared and mixed at leaſt one Year before it is uſed; it will be much better to take the Earth of a Kitchen Garden which has been well wrought and dunged; but this ſhould be clear from all Roots of Trees and bad Weeds. If this Earth is well mixed with the other Parts ſix Months, and often turned over, it will be fitter for Pots and Tubs, than the other will in twice that Time, as I have frequently experienced, ſo can write from Knowledge, nor from Theory. This Earth being the principal Ingredient in Compoſts deſigned for ſuch Plants as require a rich Soil; the next is a Quantity of very rotten Dung, from old hot Beds; or for thoſe Plants which delight in a cool Soil, a Quantity of rotten Neats Dung is preferable. The Proportion of this muſt be according to the Quality of the Earth; for if that is poor, there ſhould be one third Part of Dung, but if it be rich, a 4th Part or leſs will be ſufficient. Theſe, when well incorporated and the Parts divided, will require no other Mixture, unleſs the Earth is inclinable to bind, in which Caſe it will be proper to add, ſome Sand or Sea Coal Aſhes to it; if Sea Sand can be eaſily produced, that is the beſt, the next to that is drift Sand; but that from Pits is by no means proper. The Proportion of this muſt be according to the Nature of the Earth, for if that is ſtiff, there muſt be a greater Proportion uſed, but this ſhould not exceed a fifth Part, unleſs it is very ſtrong, in which Caſe it will require a longer Time to lie, and muſt be often turned over before it is uſed.

The next Compoſt, for Plants which do not require ſo good Earth, and naturally grow on looſe Soils, ſhould be half of the before mentioned Earth from a Paſture, or that from a Kitchen Garden; and if theſe are inclinable to bind, there ſhould be a third Part Sand, and the other Part rotten Tan, which will be of great Uſe to keep the Parts divided, and let the Moiſture paſs off.

The Compoſition for moſt of the ſucculent Plants, is prepared with the following Materials; the Earth from a Common, where it is light, taken on the Surface, one Half, the other Half Sea or drift Sand, and old Lime Rubiſh ſcreened of equal Parts; theſe, well mixed and often turned over, I have found to anſwer better than any other Compoſt, for moſt of the very ſucculent Plants.

The other Sort of Compoſt, which is deſigned for Plants which delight in a very looſe, light, rich Earth; ſhould be made of light Earth taken from a Kitchen Garden, which has been well dunged, and thoroughly wrought, like thoſe near *London*, one Half; of rotten Tanners Bark one Third, and the other Part Mud from the ſcouring of Ditches, or from the Bottoms of Ponds, where the Soil is fat: But this Mud ſhould lie expoſed in ſmall Heaps a whole Year, and often turned over before it is mixed with the other, and afterward frequently turned and mixed, for eight Months or a Year before it is uſed.

In all Mixtures, where rotten Wood may be required, if the rotten Tanners Bark, which is taken from old hot Beds is uſed, that will anſwer every Purpoſe of the other; and wherever Sand is neceſſary in any Compoſt, the Sea Sand ſhould always be prefered to all other, as it abounds with more Salts; but this ſhould not be uſed freſh, becauſe the Salts ſhould be expoſed to the Air, which will looſen the Particles, and thereby render them better adapted for the Nutriment of Vegetables.

There are ſome who have directed the Uſe of rotten Leaves of Vegetables, as an excellent Ingredient in Compoſts; but from many years Experience, I can affirm, they are of little Uſe, and contain the leaſt Quantity of vegetable Paſture, of any Dreſſing which is uſed. Others, who never have had any Experience in the Culture of Plants, have directed different Compoſts for almoſt every Plant; and theſe conſiſt of ſuch a Variety of Ingredients, as greatly to reſemble the Preſcriptions of a Quack Doctor; for no Perſon who has been converſant in the Buſineſs of Gardening, could be guilty of ſuch groſs Abſurdity: For it is well known, that a few different Compoſts will be ſufficient for all the known Plants in the World. But thoſe who pretend to give Directions for the Culture of Plants from Theory only, begin at the wrong End, for the true Knowledge of Gardening or Agriculture, muſt be from Experience, and is not to be obtained in a Garret.

The ſeveral Sorts of Dreſſing for Land, will be particularly treated under their reſpective Titles, and in general will be mentioned under the Article of Dung.

In making any Compoſt, great Care ſhould be had, that the ſeveral Parts are properly mixed together, and not to have too much of any one Sort thrown together; therefore, when 3 or 4 ſeveral Sorts are to be mixed together, there ſhould be a Man or two placed to each Sort, in Proportion to the Quantity of each; for if two Parts of any one Sort are requiſite to be added, there ſhould be two Men put to that, and but one to each of the other: And theſe Men muſt be careful to ſpread each Sort in ſuch a Manner over each other, as that they may be exactly mixed together. Another Thing which ſhould be obſerved is, never to lay theſe Compoſts in too large Heaps, but rather continue them in Length, laying them up in a Ridge; ſo that the Sun and Air may more eaſily penetrate through it: And, as theſe Compoſts ſhould (if poſſible) be made a Year before they are uſed, that they may enjoy a Summer's Sun and Winter's Froſt, they ſhould be frequently turned over, which will prevent the Growth of Weeds, and expoſe every Part of the Heaps equally to the Sun and Air, which is of great Advantage to all Sorts of Compoſts; for the more they are expoſed to the Influences of theſe, the better will the Earth be prepared for Vegetation, this is evinced by fallowing of Land, which, when rightly managed, is equivalent to a Dreſſing.

COMPOUND FLOWERS are ſuch as conſiſt of many Florets, or Semiflorets, or both together, which are included in one common Empalement, ſo make up what is commonly called one whole Flower.

CONE. A Cone is a hard, dry, Seed Veſſel of a Sugar-loaf Figure, conſiſting of ſeveral woody Parts;

and is, for the moſt part, ſcaly, adhering cloſely together, and ſeparating when ripe.

CONIFEROUS TREES are ſuch as bear Cones; as, the Cedar of *Lebanon*, Fir, Pine, &c.

CONIUM. *Lin. Gen. Plant.* 299. *Cicuta. Tourn. Inſt. R. H.* 306. *Tab.* 160. Hemlock, in *French Cigue.*

The *Characters* are,

It is an umbelliferous Plant; the general Umbel is compoſed of ſeveral ſmall ones termed Rays, which ſpread open, which are alſo ſpread in the like Manner. Both theſe have Involucrums, compoſed of many ſhort Leaves. The Petals of the greater Umbel are uniform; each Flower is compoſed of 5 unequal Heart-ſhaped Petals which turn inward, they have 5 Stamina, which are terminated by roundiſh Summits. The Germen, which is ſituated under the Flower, ſupports two reflexed Styles, crowned by obtuſe Stigmas. The Germen becomes a roundiſh channeled Fruit, divided into two Parts, containing two Seeds, which are convex and furrowed on one Side, and plain on the other.

The *Species* are,

1. CONIUM *ſeminibus ſtriatis, foliolis inciſis. Conium* with ſtriated Seeds, and ſmaller Leaves cut at the Top. This is the *Cicuta major. C. B. P.* 160. Greater Hemlock.

2. CONIUM *ſeminibus ſtriatis, foliolis tenuioribus. Conium* with ſtriated Seeds and narrower Leaves. This is the *Cicuta major, foliis tenuioribus. C. B. P.* 160. Greater Hemlock with narrower Leaves.

3. CONIUM *ſeminibus aculeatis. Hort. Cliff.* 92. Hemlock with prickly Seeds. This is the *Caucalis Africana, folio minore, Rutæ. Boerh. Ind. Alt. Sp.* 63. *African Caucalis* with a ſmaller Rue Leaf.

The 1ſt Sort grows naturally on the Side of Banks and Roads, in many Parts of *England*; this is a biennial Plant, which periſhes after it hath ripened Seeds. It hath a long taper Root like a Parſnep, but much ſmaller. The Stalk is ſmooth, ſpotted with purple, and riſes from 4, to upwards of 6 Feet high, branching out toward the Top into ſeveral Stalks; theſe are garniſhed with decompounded Leaves, whoſe ſmall Leaves are cut at the Top into 3 Parts; theſe are of a lucid green, and have a diſagreeable Smell. The Stalks are terminated by Umbels of white Flowers, each being compoſed of about ten Rays (or ſmall Umbels) and theſe have a great Number of Flowers, which ſpread open, each ſitting upon a ſlender Foot Stalk; the Seeds are ſmall and channeled, and like thoſe of Aniſe. It flowers in *June*, and the Seeds ripen in Autumn.

The 2d Sort differs from the firſt, in having taller Stalks, which are not ſo much ſpotted. The Leaves are much narrower, and of a paler green; and this Difference is conſtant, for I have cultivated it near 15 Years in the *Chelſea* Garden, where it has not varied. The Seeds were ſent me from *Germany*, where it grows naturally. This is biennial as the former.

The 3d Sort grows naturally near the *Cape of Good Hope*, in *Africa*, from whence the Seeds were brought to *Holland*, where the Plants have been preſerved in ſome of their curious Gardens. The Seeds of this were ſent me by the late Dr. *Boerhaave*. This Plant rarely grows more than 9 Inches high; the lower Leaves are divided ſomewhat like thoſe of the ſmall wild Rue, and are of a grayiſh Colour; thoſe upon the Stalk are much narrower, but of the ſame Colour; the Stalks are terminated, by Umbels of white Flowers, each of theſe larger Umbels being compoſed of 3 ſmall ones; the Involucrum hath 3 narrow Leaves, ſituated under the Umbel. This flowers in *July*, and ripens Seed in Autumn, ſoon after which the Plants decay.

The 1ſt Sort grows wild in moſt Parts of *England*, ſo is ſeldom allowed Room in Gardens, becauſe it is ſuppoſed to have a poiſonous Quality, ſome Phyſicians have affirmed that it is ſo to all Animals, while others have aſſured us, that it is eaten by the Inhabitants of ſome Parts of *Italy* when it is young, and is by them eſteemed a great Dainty. Mr. *Ray* mentions that he has found the Gizzard of a Thruſh, full of Hemlock Seeds, with four or five Grains of Corn, intermixed with it, which, in the Time of Harveſt, that Bird had neglected for Hemlock, ſo very fond was it of that Seed which we reckon pernicious. However it is very certain that ſcarce any Animal will eat the green Herb; for it is very common to ſee the Graſs, and moſt other Weeds eat cloſe where Cattle feed, and all the Plants of Hemlock left untouched.

This Plant is eſteemed by many Phyſicians, as an excellent Remedy to diſſolve ſchirrous Tumours; and ſome have greatly recommended it for Cancers, and moſt of them agree, that it may be preſcribed as a good Narcotick.

The 2d Sort is preſerved in ſome Botanick Gardens for Variety. If the Seeds are permitted to ſcatter, the Plants will come up in Plenty, and if not rooted out, will become as troubleſome Weeds as the firſt Sort.

The 3d Sort is an humble Plant, and being tender, will never become troubleſome; for unleſs the Winters are very favourable, it will not live in the open Air in *England.* The Seeds of this Sort ſhould be ſown in Pots in Autumn ſoon after they are ripe, and placed under a common Frame in Winter, where they may be expoſed to the open Air at all Times when the Weather is mild, and only covered in bad Weather. The Plants will come up very early in Spring, and muſt then be expoſed to the open Air conſtantly when the Weather will permit, otherwiſe they will draw up very weak: As they do not bear tranſplanting well, they ſhould be thinned, and not more than four or five left in each Pot; they have no great Beauty, ſo a few of them will be ſufficient to continue the Sort, where a Variety of Plants are preſerved. The other Culture is only to keep them clean from Weeds, and in very dry Weather, to water them.

There is another *Species* of this Genus, which is now ſeparated from it, and placed ſingly under the Title of *Æthuſa.* This was titled, *Cicuta minor petroſelino ſimilis*, by *Caſpar Bauhin*, *i. e.* Smaller Hemlock like Parſley, this is a Weed which frequently is found in Gardens eſpecially in rich Ground; and is generally ſuppoſed to be very poiſonous: Some who have ignorantly gathered this Herb, and uſed it for Parſley having been poiſoned by it; therefore it was formerly called, Fools Parſley. This may be diſtinguiſhed from Parſley, by the Narrowneſs of the ſmall Leaves, which are alſo more pointed, and of a darker green. But thoſe who are afraid of being deceived in this, ſhould always uſe the curled Parſley, which is ſo different from this, that it cannot be miſtaken for it.

CONOCARPODENDRON. *See* Protea.

CONOCARPUS. *Lin. Gen. Plant.* 213. *Rudbeckia. Houſt. Nov. Gen.* 21. Button Tree, *vulgò.*

The *Characters* are,

The Flowers are collected in a globular Head, each ſtanding in a ſcaly Empalement. At the Bottom is a large compreſſed Germen, crowned by the Empalement of the Flower which is ſmall, and divided into 5 Parts at Top. The Flower hath one Petal, cut into 5 equal Parts, it hath 5 ſlender Stamina, which extend beyond the Petal, terminated by roundiſh Summits. The Germen ſupports a ſingle Style which is longer than the Stamina, and is crowned by an obtuſe Stigma. The Germen becomes a ſingle Seed, incloſed in the Scale of the Fruit, which is ſhaped like the Cone of Alder.

The *Species* are,

1. CONOCARPOS, *foliis lanceolatis alternis, floribus alaribus in caput conicum collectis. Conocarpos* with Spear-ſhaped Leaves, growing alternate, and Flowers proceeding from the Sides of the Branches, collected in a conical Head. This is the *Rudbeckia erecta longifolia. Houſt. Miſſ.* Upright *Rudbeckia* with a long Leaf, commonly called Button Tree in the *Weſt-Indies.*

2. CONOCARPOS, *fruteſcens, procumbens, foliis ovatis craſſis, floribus alaribus & terminalibus.* Shrubby, trailing *Conocarpos,* with oval, thick Leaves, and Flowers, growing on the Sides, and at the Ends of the Branches. This is the *Rudbeckia maritima procumbens rotundifolia. Houſt.* Maritime trailing *Rudbeckia,* with a round Leaf.

The 1ſt Sort grows plentifully in ſandy Bays, in all the Iſlands of the *Weſt-Indies.* It riſes with a woody upright Stem about 16 Feet high, ſending out many Side Branches, which alſo grow erect; theſe are garniſhed with Spear-ſhaped Leaves, having broad ſhort Foot Stalks, and are placed alternate on every Side the Branches. The Flowers grow on ſhort Branches, which ariſe from the Wings of the Leaves; theſe have 3 or 4 ſmall Leaves on their lower Part, under the Flowers; each of theſe Branches are terminated by 6 or 8 conical Heads of Flowers, which have ſome Reſemblance to thoſe of *Acacia,* but each of theſe come out of a ſcaly Covering; the Flowers are ſmall, of a reddiſh Colour having 5 ſlender Stamina, and one Style, which ſtand out farther than the Petal. The Flowers are ſucceeded by ſingle Seeds, included in the Scales of the conical Fruit.

The 2d Sort hath ſhort crooked Branches, which divide and ſpread out on every Side, upon the Ground; theſe are covered with a grayiſh Bark, and their upper Parts are garniſhed with oval thick Leaves a little larger than thoſe of the Dwarf Box; they have very ſhort Foot Stalks, placed on every Side the Branches without Order. The Flowers are collected in ſmall round Heads which come out ſingle from the Side of the Branches, and in looſe Spikes at the End; theſe are ſmall, and of an herbaceous Colour; the Scales are rough, and the Cones of a looſer Texture than thoſe of the former Sort.

This was diſcovered growing plentifully in Marſhy Grounds near the Sea, at the *Havannah,* from whence the Seeds were ſent to *England,* in 1730.

Both theſe Sorts are preſerved in ſome curious Gardens for Variety; but are Plants of no great Beauty: They are propagated from Seeds, which muſt be obtained from the Places of their natural Growth; for they never produce any good Seeds in *Europe:* Theſe Seeds, if freſh, will come up very ſoon, if they are ſown upon a good hot Bed; and if the Plants are potted, and preſerved in the Bark Stove, they will make great Progreſs; but they are too tender to live in this Country, unleſs they are conſtantly kept in the Stove, and treated as other exotick Plants; obſerving, as they are Natives of Swamps, to ſupply them often with Water; but in Winter they muſt have it very ſparingly. Theſe Plants are Evergreen, caſting off their old Leaves when the new come out.

CONSOLIDA MAJOR. *See* Symphytum.

CONSOLIDA MEDIA. *See* Bugula.

CONSOLIDA MINIMA. *See* Bellis.

CONSOLIDA REGALIS. *See* Delphinium.

CONVALLARIA. *Lin. Gen. Plant.* 383. *Lilium Convallium. Tourn. Inſt. R. H.* 77. *Tab.* 14. Lilley of the Valley, in *French, Muguet.* To this Genus Dr. *Linnæus* has joined the *Polygonatum* of *Tournefort,* or *Solomon's* Seal.

The *Characters* are,

The Flower hath one Petal, which is Bell-ſhaped, and divided at the Brim into ſix obtuſe Parts, which ſpread open and are reflexed. It hath no Empalement. It hath ſix Stamina, which are inſerted into the Petal, and are ſhorter, terminated by oblong Summits, which are erect. In the Center is ſituated a globular Germen, ſupporting a ſlender Style, which is longer than the Stamina, crowned by a three cornered obtuſe Stigma. The Germen becomes a globular Berry, with three Cells, containing one roundiſh Seed.

The *Species* are,

1. CONVALLARIA *ſcapo nudo. Flor. Lapp.* 113. *Convallaria* with a naked Stalk. This is the *Lilium Convallium Album. C. B. P.* 304. White Lilly of the Valley. There is a Variety of this in Gardens, with reddiſh Flowers, titled by *Caſpar Bauhin, Lilium convallium flore rubente. Pin.* 304. Lilly of the Vallies with a bluſhing Flower.

2. CONVALLARIA *ſcapo nudo, foliis latioribus. Convallaria* with a naked Stalk, and broader Leaves. This is the *Lilium Convallium latifolium. C. B. P.* 136. Broad leaved Lilly of the Valley. There is alſo a Variety of this with double variegated Flowers. This *Tournefort* titles *Lilium Convallium latifolium, flore pleno variegato. Inſt. R. H.* 77. Broad leaved Lilly of the Vallies, with a large variegated Flower.

3. CONVALLARIA *foliis alternis, floribus axillaribus. Flor. Suec.* 274. *Convallaria* with Leaves placed alternate, and Flowers proceeding from the Sides of the Stalks. This is the *Polygonatum latifolium vulgare. C. B. P.* 305. Common broad leaved *Solomon's* Seal.

4. CONVALLARIA *foliis alternis, ſemiamplexicaulibus, floribus majoribus axillaribus. Convallaria* with alternate Leaves, which half embrace the Stalks, and larger Flowers proceeding from the Sides. This is the *Polygonatum latifolium, flore majore odoro. C. B. P.* 303. Broad leaved *Solomon's* Seal with a larger ſweet Flower.

5. CONVALLARIA *foliis amplexicaulibus, caule tereti, pedunculis axillaribus multifloris. Lin. Phil. Bot.* 218. *Convallaria* with a taper Stalk, embraced by the Leaves, and Foot Stalks proceeding from the Sides, ſuſtaining many Flowers. This is the *Polygonatum latifolium maximum. C. B. P.* 303. Greateſt broad leaved *Solomon's* Seal.

6. CONVALLARIA *foliis alternis petiolatis, pedunculis axillaribus trifloris. Convallaria* with alternate Leaves,

having Foot Stalks, thoſe to the Flowers proceeding from the Sides, and ſuſtaining three Flowers. This is the *Polygonatum latifolium Hellebori albi foliis. C. B. P.* Broad leaved *Solomon*'s Seal with a white Hellebore Leaf.

7. Convallaria *foliis verticillatis. Flor. Lapp.* 114. *Convallaria* with Leaves growing in Whorls. This is the *Polygonatum anguſtifolium, non ramoſum. C. B. P.* 303. Unbranched *Solomon*'s Seal with narrow Leaves.

8. Convallaria *foliis ſeſſilibus, racemo terminali compoſito. Lin. Sp. Pl.* 315. *Convallaria* with Leaves ſitting cloſe to the Stalks, terminated by compound Spikes of Flowers. This is the *Polygonatum Virginianum erectum, ſpicatum, flore ſtellato ſterili. Mor. Hiſt.* Upright ſpiked *Solomon*'s Seal of *Virginia*, with a ſtarry barren Flower.

9. Convallaria *foliis amplexicaulibus plurimis, racemo terminali ſimplici. Lin. Sp. Plant.* 316. *Convallaria* with many Leaves embracing the Stalks, which are terminated by ſingle Bunches of Flowers. This is the *Polygonatum Canadenſe ſpicatum fertile. Cornut. Canad.* 33. *Tab.* 33. *Canada Solomon*'s Seal with a fertile Spike.

10. Convallaria *foliis cordatis. Flor. Lapp.* 113. *Convallaria* with Heart-ſhaped Leaves. This is the *Smilax unifolia humillima. Tourn. Inſt. App.* 564. Loweſt Smilax with a ſingle Leaf; and the *Lilium Convallium minus. C. B. P.* 304. The leaſt Lilly of the Valley.

The firſt Sort grows naturally in great Plenty in the Woods near *Woburn*, in *Bedfordſhire*, from whence the Markets in *London* are generally ſupplied with the Flowers. It is alſo cultivated in Gardens for the Sweetneſs of the Flowers.

This hath a ſlender fibrous Root, which creeps under the Surface of the Ground, and thereby propagates in great Plenty. The Leaves come up by Pairs, their Foot Stalks, which are about three Inches long, are wrapped together in one Cover, and at the Top divide into two Parts, each ſuſtaining a ſingle Leaf, one of which riſes a little above the other; theſe Leaves are from four to five Inches long, and near an Inch and a Half broad in the Middle, leſſening gradually to both Ends; theſe have many longitudinal Veins, running parallel to the Mib-rib, which is not ſituated exactly in the Middle, but diverges to one Side; the Foot Stalks of the Flowers ariſe immediately from the Root, on one Side the Leaves; theſe are naked, about five Inches long, and are adorned toward their upper Parts with pendulous white Flowers, ranged on one Side the Stalk, which declines to one Side; each Flower ſtands upon a ſhort ſeparate Foot Stalk, which is bending and crooked. The Flowers are open, of the ſhort Bell-ſhaped Kind, their Brims being reflexed, which are ſlightly cut into ſix Parts; they have ſix Stamina, inſerted in the Petal of the Flower, and ſhorter than the Tube, and a ſingle Style ariſing from the Germen, which is triangular, and crowned by a three cornered Stigma; the Germen becomes a globular Berry, of a red Colour when ripe, incloſing three roundiſh Seeds. It flowers in *May*, from whence it has been titled *May* Lilly. The Seeds ripen in Autumn. The Flowers of this Sort are uſed in Medicine; they are eſteemed cephalick and cordial, ſo are recommended for Palſies, Epilepſies, and Spaſms; of which is prepared a Conſerve, and a compound diſtilled Water. This compound Water is by the *Germans* titled *Aqua Aurea*, or Golden Water, becauſe of its excellent Virtues.

There is another Variety of this with narrow Leaves, which I ſuppoſe may ariſe from the Soil, or Situation, for the Roots which I have taken up in thoſe Places have naturally narrow Leaves, but when planted in the Garden, have produced Leaves as broad as the common Sort; but the Sort with red Flowers has conſtantly continued the ſame above thirty Years, without any Variation. The Flowers of this are ſmaller, the Stalks are redder, and the Leaves of a darker green than thoſe of the common Sort, but as I have not propagated this Sort by Seeds, I cannot be ſure if it is a diſtinct Species, or only a ſeminal Variety.

The 2d Sort I received from the *Alps*, where it naturally grows; this has retained its Difference in the Garden, where it grew in the ſame Soil and Situation with the common Sort, ſo I make no Doubt of its being a diſtinct Species. The other with a double variegated Flower is ſuppoſed to be only a Variety of this, but the Flowers are much larger, and beautifully variegated with purple and white. I received a Plant of it from the Royal Garden at *Paris*, which has flowered ſeveral Years in the *Chelſea* Garden, but the Roots do not increaſe.

Theſe Plants require a looſe ſandy Soil, and a ſhady Situation; they are propagated by parting their Roots, which multiply in great Plenty. The beſt Time to tranſplant and part the Roots, is in Autumn. They ſhould be planted near a Foot aſunder, that their Roots may have Room to ſpread; for if they agree with the Soil and Situation, they will meet and fill the Ground in one Year. If theſe Roots are planted in a rich Soil, they will ſpread and multiply greatly, but will not be ſo productive of Flowers. The only Culture they require, is to keep them clean from Weeds, and tranſplant and ſeparate the Roots every 3d or 4th Year, otherwiſe they will be ſo greatly matted together, as not to have proper Nouriſhment, ſo the Flowers will be ſmall, and few in Number.

The 3d Sort is the common *Solomon*'s Seal, which is ſaid to grow naturally wild in *England*, but I doubt ours is a different Sort from that mentioned by *Caſpar Bauhin* under that Title; for in two Places where I have found it growing, the Stalks were much ſhorter, the Leaves broader, and their Borders turned inward; this Difference continues in the Garden, where it grows in the ſame Soil and Situation with the other.

This Plant hath a fleſhy white Root, as large as a Man's Finger, which creeps in the Ground, and is full of Knots, from whence it had the Name of *Polygonum*, or many Knees. In the Spring ariſe ſeveral taper Stalks, which grow near two Feet high, adorned with oblong oval Leaves, placed alternate, having many longitudinal Veins running parallel to the Middle, and embrace the Stalks with their Baſe; theſe are ranged on one Side of the Stalk, and on the oppoſite Side come out the Foot Stalks of the Flowers, which are about an Inch long, dividing at the Top into three or four ſmaller, each ſuſtaining a ſingle tubulous Flower, cut into ſix Parts at the Brim, where it is green, the lower Part of the Tube being white; theſe have each ſix ſlender Stamina, ſurrounding a ſingle Style, which ariſes from the Germen, and is crowned by a blunt Stigma ; the Germen becomes a round Berry, about the Size of Ivy Berries, each incloſing three Seeds. This flowers in *May*, and the Seeds ripen in Autumn, and then the Stalks decay.

The 4th Sort does not riſe ſo high as the 3d, the Leaves are broader, and half embrace the Stalks with their Baſe. It hath fewer Flowers on each Foot Stalk, and thoſe are much larger, and ſmell ſweet ; this Difference continues when cultivated in a Garden. It grows naturally in the Woods in *Auſtria*, and other Parts of *Germany*.

The 5th Sort riſes much higher, the Leaves are broader, and embrace the Stalks with their Baſe, there are many more Flowers on each Foot Stalk, which have longer and narrower Tubes than either of the former. This grows naturally in the northern Parts of *Europe*.

The 6th Sort hath large fleſhy Roots, full of Knots, or Joints, which ſend up many Stalks above 3 Feet high ; theſe are garniſhed with oblong oval Leaves, near 5 Inches long, and above two Inches broad in the Middle, having many deep longitudinal Furrows, running parallel to the Mid-rib, ſomewhat like thoſe of white Hellebore ; theſe have ſhort Foot Stalks. The Flowers come out on the oppoſite Side of the Stalks from the Leaves, having ſhort Foot Stalks, which divide into 3 ſmaller, each ſuſtaining one Flower, with a long ſlender Tube, more cloſed at the Top than thoſe of the other Species, but the Colour is the ſame. This grows naturally on the *Alps*, and the Mountains in *Italy*.

The 7th Sort riſes with an upright Stalk, about 2 Feet high, garniſhed with long narrow Leaves, which ſtand in Whorls round the Stalk, there are generally 5 of theſe placed at each Joint ; they are 4 Inches long, and Half an Inch broad, ſmooth, and of a light green. The Flowers come out from the ſame Joints, on ſhort Foot Stalks, each ſupporting 5 or 6 Flowers, which are ſmaller, and have much ſhorter Tubes than either of the former Sorts ; they are of a dirty white tiped with green, and ſlightly cut into ſix Parts at the Top. It grows naturally in the northern Parts of *Europe*.

The 8th Sort grows naturally in moſt Parts of *North America* ; This riſes with an upright Stalk, about 2 Feet high, garniſhed with oblong Leaves, ending in ſharp Points ; theſe are near 5 Inches long, and two and a Half broad, having 3 large longitudinal Veins, with ſeveral ſmaller between, which join at both Ends. The Leaves are alternate, ſtanding cloſe to the Stalks, and are of a light green on their upper Side, but paler on their under. The Flowers are produced in branching Spikes at the Extremity of the Stalks, each being compoſed of ſeveral ſmall looſe Spikes of Star like Flowers, of a pale yellow, which fall away without producing any Seed. This flowers the latter End of *May*, or Beginning of *June*, and the Stalks decay in Autumn, but the Root is perennial, and propagates by Offſets.

The 9th Sort is a Native of the ſame Country ; this ſends up Stalks 2 Feet high, garniſhed with many oblong Leaves embracing the Stalks with their Baſe. The Flowers are produced in ſingle Spikes at the Top of the Stalks, which are in Shape and Colour like thoſe of the 8th ; but theſe are ſucceeded by ſmall red Berries, about the Size of thoſe of the Lily of the Valley. This flowers the Beginning of *June*, the Berries ripen in Autumn.

All theſe Sorts of *Solomon*'s Seal are very hardy Plants, and delight in a light Soil and a ſhady Situation, ſo are very proper to plant in Wilderneſs Quarters under tall Trees, where if they are not crowded by lower Shrubs, they will thrive and multiply exceedingly, and during the Summer Seaſon will make an agreeable Variety, the whole Appearance of the Plants being very ſingular.

They all multiply very faſt by their creeping Roots, eſpecially when planted in a proper Soil and Situation. The beſt Time to part and tranſplant the Roots is in Autumn, ſoon after their Stalks decay ; thoſe which are removed at this Seaſon, will grow much ſtronger, than thoſe which are planted in the Spring, which is the Reaſon of my preferring that Seaſon ; but they may be ſafely tranſplanted any Time after the Stalks decay, till the Roots begin to ſhoot in the Spring. As theſe Roots greatly increaſe, they ſhould be planted at a wide Diſtance from each other, that they may have Room to ſpread, for they ſhould not be removed oftener than every third or fourth Year, where they are expected to grow ſtrong, and produce a good Number of Stalks, in which their Beauty conſiſts. The only Culture theſe Plants require, is to dig the Ground between them every Spring, and keep them clean from Weeds.

The Roots of the 3d Sort are uſed in Medicine ; it is greatly recommended in all Manner of Contuſions. The diſtilled Water of the Plant clears the Face, and beautifies the Complexion ; a Decoction of it cures the Itch, and ſuch like cutaneous Diſtempers.

The 10th Sort is an humble Plant, which when tranſplanted into Gardens, ſeldom riſes above ſix Inches high, and where it grows naturally, not much more than half ſo high ; this hath a fibrous creeping Root, which ſpreads and multiplies greatly in the Ground, ſending up many ſlender Stalks, each having for the moſt part two Heart-ſhaped Leaves, one ſtanding above the other. The Stalks are terminated by looſe Spikes of white Star-like Flowers, ſucceeded by ſmall red Berries. This flowers in *May*, and the Stalks decay in Autumn.

It grows naturally in all the northern Parts of *Europe*, and delights in a moiſt Soil and a ſhady Situation, where it will ſpread and multiply in great Plenty. This is propagated by its creeping Roots, and may be treated in the ſame Way as the former Sorts.

CONVOLVULUS. *Lin. Gen. Plant.* 198. *Tourn. Inſt. R. H.* 82. *Tab.* 77. Bindweed in *French Liſeron*.

The *Characters* are,

The Flower hath a permanent Empalement of one Leaf, which is divided into five Parts at the Top, the Flower hath one large Bell-ſhaped Petal which ſpreads open. It hath five ſhort Stamina, terminated by oval and compreſſed Summits. It hath a roundiſh Germen, ſupporting a ſlender Style, crowned by two broad oblong Stigmas. The Empalement afterward becomes a roundiſh Capſule, with one, two, or three Valves, containing ſeveral Seeds which are convex on their Outſide, but on the Inſide angular.

The *Species* are,

1. Convolvulus *foliis ſagittatis utrinque acutis, pedunculis unifloris. Flor. Suec.* 173. *Bindweed* with Arrow-ſhaped Leaves, pointed on both Sides, and a ſingle Flower on each Foot Stalk. This is the *Convolvulus minor arvenſis. C. B. P.* 294. Smaller Field Bindweed, commonly called, Gravel Bindweed.

2. Convolvulus, *foliis ſagittatis poſticè truncatis, pedunculis unifloris. Prod. Leyd.* Bindweed with Arrow-ſhaped Leaves, which are torn behind, and a ſingle Flower on each Foot Stalk. *Convolvulus major albus. C. B. P.* Larger white Bindweed, called Bearbind.

3. Convolvulus, *foliis ſagittatis poſticè truncatis, pedunculis bifloris. Prod. Leyd.* Bindweed with Arrow-pointed Leaves torn behind, and two Flowers on each Foot Stalk. *Convolvulus Syriacus & Scammonia Syriaca. Mor. Hiſt. Syrian* Bindweed, and *Syrian* Scammony.

4. Convolvulus *annuus, foliis cordatis calycibus acutis, villoſis.* Annual Bindweed, with Heart-ſhaped Leaves, and hairy Empalements which are pointed. This is the *Convolvulus purpureus, folio ſubrotundo. C. B. P.* Purple Bindweed with a roundiſh Leaf, commonly called, *Convolvulus major*, or greater Bindweed.

5. Convolvulus, *foliis cordatis, acuminatis, pedunculis trifloris.* Bindweed with Heart-ſhaped, pointed, Leaves, and three Flowers on each Foot Stalk. This is the *Convolvulus major, folio ſubrotundo, flore amplo purpureo. Sloan. Cat. Jam.* 55. Greater Bindweed with a roundiſh Leaf and a large purple Flower.

6. Convolvulus, *foliis cordatis trilobis villoſis, calycibus lævibus, capſulis hirſutis, pedunculis bifloris.* Bindweed with Heart-ſhaped Leaves having three Lobes, which are hairy, ſmooth Flower Cups, hairy Seed Veſſels, and two Flowers on each Foot Stalk. This is the *Convolvulus cæruleus hederaceo anguloſo folio. C. B. P.* 295. Blue Bindweed, with an angular Ivy Leaf.

7. Convolvulus, *foliis cordatis angulato-nervoſis, caule repente tubifero. Lin. Sp. Pl.* 154. Bindweed with Heart-ſhaped Leaves, having angular Nerves, and a creeping Stalk bearing Tubers. This is the *Convolvulus radice tuberoſâ eſculentâ minore purpurea. Sloan. Cat. Jam.* 54. Bindweed with a ſmall purple tuberous eſculent Root, commonly called *Spaniſh* Potatoes.

8. Convolvulus, *foliis palmatis, lobis ſeptem-ſinuatis acutis, pedunculis unifloris, calycibus maximis patentibus.* Bindweed with palmated Leaves with ſeven ſinuated pointed Lobes, a ſingle Flower on each Foot Stalk, and a large ſpreading Empalement. This is ſuppoſed to be the *Convolvulus pentaphyllos, folio glabro dentato, viticulis hirſutis. Plum. Cat.* Five leaved Bindweed with ſmooth indented Leaves, and hairy Stalks.

9. Convolvulus, *foliis haſtato lanceolatis, auriculis rotundatis, pedunculis multifloris.* Bindweed with Spear-pointed Leaves having rounded Ears, and many Flowers on each Foot Stalk. This is the *Convolvulus Americanus, Ariſtolochiæ folio longiore, floribus plurimis. Houſt. Mſſ. American* Bindweed, with a longer Birthwort Leaf and many Flowers on one Foot Stalk.

10. Convolvulus, *foliis cordatis ſubhaſtatiſque villoſis, caule petioliſque piloſis, pedunculis multifloris. Lin. Sp. Pl.* 159. Bindweed with Heart-ſhaped Leaves ſomewhat Spear-pointed and downy, with hairy Stalks and Foot Stalks, and many Flowers on each. This the *Convolvulus Americanus polyanthos, althææ folio villoſo. Houſt. Mſſ. American* Bindweed with many Flowers, and a downy Marſh Mallow Leaf.

11. Convolvulus, *foliis ovato oblongis, glabris pedunculis unifloris, calycibus decempartitis.* Bindweed with oval, oblong, ſmooth Leaves, and Foot Stalks having a ſingle Flower, whoſe Empalement is cut into ten Parts. This is the *Convolvulus floribus amplis purpureis. Houſt. Mſſ.* Bindweed with long purple Flowers.

12. Convolvulus *hirſutiſſimus, foliis quinquelobatis, pedunculis longiſſimis bifloris.* Very hairy Bindweed, with Leaves having five Lobes, and very long Foot Stalks with two Flowers.

13. Convolvulus, *caule fruticoſo, glabro, foliis quinque lobis, pedunculis geniculatis, unifloris, capſulis maximis.* Bindweed with a ſhrubby, ſmooth Stalk, Leaves having five Lobes, many jointed Foot Stalks with one Flower, and very large Seed Veſſels. This is the *Convolvulus pentaphyllos, flore & fructu purpureis maximis. Plum. Cat.* Five leaved Bindweed with a very large purple coloured Flower and Fruit.

14. Convolvulus, *foliis emarginatis, pedunculis trifloris. Lin. Sp. Plant.* 159. Bindweed with indented Leaves and Foot Stalks, having three Flowers. This is the *Convolvulus marinis Catharticus, folio rotundo, flore purpureo. Plum. pl. Amer.* 89. *Tab.* 104. Purging Sea Bindweed, with a round Leaf and a purple Flower.

15. Convolvulus, *foliis cordatis, glabris, pedunculis multifloris, ſemine villoſo ferrugineo.* Bindweed with ſmooth, Heart-ſhaped Leaves, Foot Stalks having many Flowers, and Seeds covered with an Iron coloured Down.

16. Convolvulus, *foliis cordatis pubeſcentibus, caule perenni, villoſo, pedunculis multifloris. Lin. Sp. Pl.* 155. Bindweed with ſoft, woolly, Heart-ſhaped Leaves, a hairy perennial Stalk, and Foot Stalks having many Flowers. This is the *Convolvulus Canarienſis ſempervirens. Hort. Amſt.* Ever-green *Canary* Bindweed.

17. Convolvulus *foliis triangularibus acutis, floribus plurimis ſeſſilibus patulis, calycibus acutis, multifidis.* Bindweed with ſharp pointed tringular Leaves, many ſpreading Flowers ſet cloſe to the Stalk, and acute Empalements ending in many Points. This is the *Convolvulus folio hederaceo, anguloſo, lanuginoſo, flore magno, cæruleo, patulo. Sloan.* Bindweed with an angular, woolly, Ivy Leaf, and a large ſpreading blue Flower.

18. Convolvulus *foliis cordatis, acuminatis, pedunculis bifloris.* Bindweed with Heart-ſhaped, pointed Leaves, and Foot Stalks, having two Flowers. This is the *Convolvulus Americanus hirſutus, flore amplo roſeo. Houſt. Mſſ.* Hairy *American* Bindweed with a pointed Leaf, and a large Roſe coloured Flower.

19. Convolvulus *foliis ſagittatis poſticè obtuſis, caule repente, pedunculis unifloris. Lin. Sp. Pl.* Bindweed with narrow pointed Leaves, obtuſe at the Foot Stalk, a creeping Stalk, and one Flower on each Foot Stalk. This is the *Convolvulus marinus catharticus, foliis Acetoſæ, flore niveo. Plum. Pl. Am.* 89. Purging Sea Bindweed with a Sorrel Leaf, and Snow white Flower.

20. Convolvulus *foliis cordato ſagittatis pedunculis unifloris.* Bindweed with Heart-ſhaped, Arrow-pointed Leaves, and Foot-Stalks having a ſingle Flower. This is the *Convolvulus excticus, Betonicæ folio, flore magno albo fundo purpureo.* Foreign Bindweed with a Betony Leaf, and a large white Flower with a purple Bottom.

21. Convolvulus, *foliis cordato ovatis, pedunculis unifloris, bracteis lanceolatis, flore ſeſſile. Hort. Cliff.* 68. Bindweed with oval Heart-ſhaped Leaves, Foot Stalks having one Flower, Spear-ſhaped Bracteæ, and the Flower ſitting cloſe to the Stalk. *Convolvulus ſiculus minor,*

flore parvo auriculato. Bocc. Pl. Sic. 89. Leſſer *Sicilian* Bindweed, with a ſmall, auriculated Flower.

22. Convolvulus *foliis palmatis ſericeis, pedunculis bifloris, calycibus acutis.* Bindweed with ſilky, palmated Leaves, Foot Stalks having 2 Flowers, and ſharp pointed Empalements. This is the *Convolvulus argenteus, elegantiſſimus, foliis tenuiter inciſis. Tourn. Inſt.* Moſt beautiful Silver Bindweed, with finely cut Leaves.

23. Convolvulus *foliis cordatis inciſis, & incanis, pedunculis bifloris, calycibus obtuſis.* Bindweed with hoary Heart-ſhaped Leaves, which are jagged, Foot Stalks having 2 Flowers, and obtuſe Empalements. This is the *Convolvulus Luſitanicus flore Cyaneo. Broſs. Portugal* Bindweed with a blue Flower.

25. Convolvulus *villoſus foliis lineari lanceolatis, caule erecto, pedunculis multifloris.* Hairy Bindweed with narrow Spear-ſhaped Leaves, an upright Stalk, and Foot Stalks, having many Flowers. This is the *Convolvulus linariæ folio aſſurgens. Tourn. Inſt. R. H.* 83. Upright Bindweed, with a Toad Flax Leaf.

26. Convolvulus *foliis lanceolatis, ſericeis, caule declinato, radice repente, pedunculis multifloris.* Bindweed with ſilky Spear-ſhaped Leaves, a declining Stalk, creeping Root and Foot Stalks, having many Flowers. *Convolvulus minor, argenteus, repens, acaulis ferme.* Smaller ſilvery, creeping Bindweed, with ſcarce any Stalk.

27. Convolvulus *foliis lanceolatis obtuſis ſericeis pedunculis multifloris. H. C.* Bindweed with blunt, Spear-ſhaped, ſilky Leaves, and Foot Stalks, having many Flowers. *Convolvulus argenteus umbellatus, erectis. Tourn. Inſt.* Silvery umbellated, upright, Bindweed.

28. Convolvulus *foliis lineari lanceolatis, acutis caule ramoſo, erecto, pedunculis unifloris. H. C.* 68. Bindweed with narrow Spear ſhaped Leaves pointed upright, a branching Stalk, and Foot Stalks with one Flower. This is the *Convolvulus ramoſus incanus, foliis piloſellæ. C. B. P.* Hoary, branching Bindweed, with a Mouſe Ear Leaf.

29. Convolvulus *foliis ſubovatis, obtuſis, petiolatis piloſis, caule diffuſo, pedunculis trifloris. Flor. Zeyl.* 76. Bindweed with oval, obtuſe, hairy Leaves, having Foot Stalks, diffuſed Stalks, and 3 Flowers on each Foot Stalk. *Convolvulus Indicus minor, Alſines folio. Houſt. Mſſ.* Smaller *Indian* Bindweed with a Chickweed Leaf.

30. Convolvulus *foliis reniformibus, pedunculis unifloris. H. C* Bindweed with Kidney-ſhaped Leaves, and one Flower on each Foot Stalk. This is the *Soldanella maritima minor. C. B. P.* Leſſer Sea Bindweed.

31. Convolvulus *foliis cordatis, angulatis, caule membranaceo, quadrangulari, pedunculis, multifloris. Flor. Zeyl.* 72. Bindweed with angular Heart-ſhaped Leaves, a quadrangular membranaceous Stalk, and Foot Stalks, having many Flowers. This is the *Convolvulus Zeylanicus, alatus, maximus, foliis Ibiſci nonnihil ſimilibus anguloſis. Herm. Lud.* 177. Greateſt, winged Bindweed of *Ceylon,* with many cornered Leaves not unlike *Althea.*

32. Convolvulus *foliis variis, pedunculis unifloris, radice tuberoſâ.* Bindweed with variable Leaves, Foot Stalks with ſingle Flowers, and a tuberous Root. This is the *Convolvulus Catharticâ. Houſt. Mſſ.* The true Jalap.

The 1ſt Sort is very common on dry Banks, and gravelly Grounds in *England,* and is generally a Sign of Gravel lying under the Surface. The Roots ſhoot very deep. It is called Devils Guts.

From the Root ariſes many weak Stalks, which trail on the Ground, and faſten themſelves about the neighbouring Plants; theſe are garniſhed with triangular Arrow-pointed Leaves. The Flowers are produced from the Side of the Branches, having long Foot Stalks, each ſuſtaining a ſingle white or red Flower, and frequently variegated. This is a troubleſome Weed in Gardens, ſo ſhould be conſtantly rooted out.

The 2d Sort is alſo a troubleſome Weed in Gardens, when the Roots are intermixed with Trees and Shrubs, or under Hedges, where the Plants cannot be eaſily deſtroyed: But in an open Spot, where the Plants are carefully hoed down for 3 or 4 Months, they may be effectually deſtroyed, for when the Stalks are broken or cut, a milky Juice flows out, and the Roots are ſoon exhauſted and decay. The Roots of this Sort are pretty thick, extend far on every Side, and are white. The Stalks riſe 10 or 12 Feet, twining themſelves about Trees or Hedges, and are garniſhed with large Arrow-pointed Leaves, which are torn at their Baſe. The Flowers come out from the Side of the Branches, upon long Foot Stalks, each ſuſtaining one large white Flower, which are ſucceeded by roundiſh Seed Veſſels having 3 Cells, filled with Seeds which are convex on one Side and plain on the other. It flowers in *June,* and the Seeds ripen in Autumn, ſoon after which the Stalks decay to the Root; but as every ſmall Piece of the Root will grow, it is a troubleſome Weed to deſtroy.

The 3d Sort grows naturally in *Syria,* where the Roots of the Plants are wounded, and Shells placed under the Wounds to receive the milky Juice which flows out, which is inſpiſſated, and afterward put up and exported: This is called *Scammony* in the Shops; it is a very hardy Plant, and will thrive very well in the open Air in *England,* provided it is on a dry Soil. The Roots are thick, run deep into the Ground, and are covered with a dark Bark. The Branches extend themſelves on every Side to the Diſtance of 3 or 4 Feet, theſe are ſlender, trail on the Ground, and are garniſhed with narrow Arrow-pointed Leaves. The Flowers are of a pale yellow, and come out from the Side of the Branches, two ſitting upon each long Foot Stalk; theſe are ſucceeded by roundiſh Seed Veſſels, having 3 Cells, filled with Seeds ſhaped like thoſe of the former Sort, but ſmaller. It flowers in *June,* and *July,* and the Seeds ripen in Autumn. If the Seeds of this Sort are ſown in Spring, on a Border of light Earth, the Plants will come up, and require no other Culture but to keep them clean from Weeds, and thin the Plants where they grow too cloſe; for as the Branches extend pretty far, the Plants ſhould not be nearer than 3 Feet. The Stalks decay in Autumn, but the Roots will abide many Years.

The 4th Sort is an annual Plant, which grows naturally in *Aſia* and *America,* but has been long cultivated for Ornament in the *Engliſh* Gardens, and is generally known by the Title of *Convolvulus major.* Of this there are 3 or 4 laſting Varieties; the moſt common hath a purple Flower, but there is one with a white, another with a red, and one with a whitiſh blue Flower, which hath white Seeds. All theſe Varieties I have cultivated many Years, without obſerving either of them change. If the Seeds are ſown in Spring, on a warm Border where the Plants are deſigned to remain, they will require no other Culture, but to keep them clean from Weeds, and place ſome tall Stakes down by them, for their Stalks to twine about, otherwiſe they will ſpread on the Ground, and make a bad Appearance. Theſe Plants, if properly ſupported, will riſe 10 or 12 Feet; they flower in *June*, *July*, and *Auguſt*, and continue till the Froſt kills them. Their Seeds ripen in Autumn.

The 5th Sort grows naturally in *Jamaica*, from whence the Seeds were ſent me, this ſends out long Branches, which twiſt about the Trees and riſe to a great Height, the Leaves are ſmooth, Heart-ſhaped, ending in long Points, and the Ears at the Baſe are large and rounded; theſe ſtand upon long ſlender Foot Stalks. The Flowers come out on the oppoſite Side of the Stalks, upon long Foot Stalks, each ſuſtaining 3 Flowers, with longer Tubes than thoſe of the former, and are of a deeper purple Colour, this flowers from the latter end of *June* till the Froſt deſtroys it. As this is not ſo hardy as the former, the Seeds ſhould be ſown on a hot Bed in Spring, to bring the Plants forward, and toward the End of *May*, they ſhould be planted out in warm Borders, and treated as the former Sort.

The 6th Sort grows naturally in *Africa* and *America*, this is an annual Plant, which riſes with a twining Stalk, 8 or 10 Feet high, garniſhed with Heart-ſhaped Leaves, divided into 3 Lobes which end in ſharp Points, theſe are woolly, and ſtand upon long Foot Stalks, the Flowers come out on long Foot Stalks, each ſuſtaining two Flowers of a very deep blue Colour, from whence it has been titled *Anil* or *Indigo.* This is one of the moſt beautiful Flowers of this Genus, and is undoubtedly a diſtinct Species; though ſome have ſuppoſed it to be only a Variety of the 4th Sort, for I have cultivated it many Years, and have never found it alter; the Leaves of this having 3 deeply divided Lobes, and thoſe of the 4th Sort being entire, is ſufficient to determine their ſpecifick Difference; this Sort is annual, and muſt be propagated as the 5th. It flowers all the latter Part of Summer, and, in good Seaſons, the Seeds ripen well in the open Air.

The 7th Sort is that whoſe Roots are eaten, and is generally titled *Spaniſh* Potatoe; theſe Roots are annually imported from *Spain* and *Portugal*, where they are greatly cultivated for the Table, but they are too tender to thrive well in the open Air in *England*, they are cultivated by the Roots in the ſame Way as the common Potatoe, but require much more Room; for theſe ſend out many trailing Stalks, which extend 4 or 5 Feet every Way, and at their Joints ſend out Roots, which, in warm Countries, grow to be large Tubers, ſo that from a ſingle Root planted, 40 or 50 large Roots are produced. This Plant is propagated by way of Curioſity in *England*; the Roots ſhould be planted on a hot Bed in Spring, and if the Plants are kept covered in bad Weather with Glaſſes, they will produce Flowers, and many ſmall Roots will be produced from the Joints; but if they are expoſed to the open Air, they ſeldom make much Progreſs.

The 8th Sort grows naturally at *La Vera Cruz*, from whence the Seeds were ſent me; this riſes with a ſtrong winding Stalk, to the Height of 20 Feet, dividing into ſeveral, ſmaller, which faſten themſelves about any of the neighbouring Trees and Shrubs; theſe are garniſhed with Leaves in Shape of a Hand, having ſeven Lobes, which are Spear-ſhaped, and deeply cut on their Borders, ending in ſharp Points. The Flowers are ſingle on each Foot Stalk, which are very long. The Empalement is large, ſpreading open, and divided deeply into 5 Parts. The Flowers are large, of a purple Colour, and are ſucceeded by large roundiſh Seed Veſſels, having 3 Cells, in each of theſe is lodged a ſingle Seed.

This Plant is tender, ſo the Seeds ſhould be ſown on a hot Bed in Spring, and when the Plants are fit to remove, they muſt be tranſplanted each into a Pot filled with light Earth, and plunged in a moderate hot Bed, obſerving to ſhade them from the Sun till they have taken new Root, then they ſhould have a large Share of Air admitted every Day, to prevent their drawing weak, and moderate Waterings 3 or 4 Times a Week. When the Plants are grown too tall to remain in the hot Bed, they muſt be ſhifted into larger Pots, and placed in the Bark Stove, where, if they are allowed Room, they will riſe to a great Height, and produce Flowers, but it rarely produces Seeds in *England*.

The 9th Sort is an annual Plant; the Seeds of this were ſent me from *Carthagena*, in *New Spain*, where the Plant grows naturally. This riſes with a twining ſlender Stalk, ten Feet high, which is garniſhed with Arrow-pointed Leaves, whoſe Ears at the Baſe are rounded. The Flowers are produced in ſmall Cluſters, ſtanding on long Foot Stalks; theſe are yellow, and are ſucceeded by three cornered Seed Veſſels, having 3 Cells, in each of theſe are lodged two Seeds.

This Plant is annual, and too tender to thrive in the open Air in *England*, ſo the Seeds ſhould be ſown on a hot Bed in Spring, and the Plants may be afterward treated in the ſame Way as the 8th Sort, with which Management they will flower, and produce ripe Seeds.

The Seeds of the 10th Sort were ſent me from *Jamaica*, where the Plants grow naturally in great Plenty. This is an annual Plant, riſing with ſlender, ſtiff, twining Stalks, 8 or 9 Feet high, garniſhed with Heart-ſhaped Leaves, which are downy. The Flowers ſtand many together at the End of ſtrong Foot Stalks; theſe are purple, and are ſucceeded by roundiſh Seed Veſſels with 3 Cells, containing ſeveral ſmall Seeds.

This Sort requires the ſame Treatment as the 8th, being too tender to thrive in this Country in the open Air.

The 11th Sort was ſent me from the Iſland of *Barbuda.* This is an annual Plant, which riſes with twining Stalks, 7 or 8 Feet high, garniſhed with oblong, oval, ſmooth Leaves. The Flowers come out at every Joint on ſlender long Foot Stalks, each ſupporting a large purple Flower, whoſe Empalement is cut almoſt to the Bottom, in ten Parts. The Seeds and Capſule are like thoſe of the other Species. This is tender, ſo muſt be treated as the 8th Sort.

The 12th Sort grows naturally at *Carthagena*, in *New Spain*, from whence I received the Seeds; this is a perennial Plant, which riſes with ſtrong winding Stalks, to the Height of 12 or 14 Feet, garniſhed with Leaves divided into 5 Lobes, ſtanding on ſhort Foot Stalks; the Flowers ſtand on long Foot Stalks, each ſuſtaining 2 purple Flowers. The Stalks, Leaves, and every Part of the Plant is cloſely covered with pungent ſtinging Hairs of a light brown Colour. This alſo is tender, ſo muſt be treated as the eighth.

The 13th Sort grows naturally about *Tolu*, in *New Spain*, from whence the Seeds were ſent me; this hath a ligneous Stalk covered with a purple Bark, which twines about the Trees, and riſes to the Height of 30 Feet or more, and is garniſhed with Leaves deeply divided into 5 ſharp pointed Lobes. The Flowers ſtand on long thick Foot Stalks, which have a Knee in the Middle; they are very large and of a purple Colour; theſe are ſucceeded by round Seed Veſſels as large as a middling Apple, divided into 3 Cells, each containing 2 very large ſmooth Seeds.

This Plant is too tender to thrive in the open Air in *England*, ſo muſt be treated as the 8th Sort, but it grows too tall for the Stoves. I have had theſe Plants upward of 20 Feet high, which have ſent out many Side Branches, extending ſo wide, as to cover moſt of the neighbouring Plants, ſo was obliged to remove them into a cooler Situation, where they would not thrive.

The 14th Sort grows naturally on the Sea Shores in moſt of the Iſlands in the *Weſt-Indies*, where the Stalks trail on the Ground, which are garniſhed with oval Leaves, indented at the Top. The Flowers are large, of a purple Colour, and are produced by Threes, on very long Foot Stalks; theſe are ſucceeded by large oval Seed Veſſels, with 3 Cells, each containing a ſingle Seed; this hath a perennial Stalk, which trails on the Ground, and ſpreads to a great Diſtance, but is too tender to thrive in the open Air in *England*, ſo muſt be treated as the 8th Sort, and may be continued 2 or 3 Years in a warm Stove, but it is apt to ſpread too far for a ſmall Stove, ſo that where there is not great Room, it is not worthy of Culture.

The 15th Sort grows naturally in *Jamaica*; this riſes with ſlender winding Stalks, 8 or 10 Feet high; the Leaves of theſe are ſhaped a little like thoſe of the common great white *Convolvulus*, but the Foot Stalks, which are pretty long, do each ſuſtain many purple Flowers, growing in Bunches. The Seed Veſſels of this Sort are 3 cornered, and have 3 Cells, each containing a ſingle Seed. This is an annual Plant, which requires a hot Bed to raiſe it, and muſt be kept in a Glaſs Caſe, or a Stove, otherwiſe the Seeds will not ripen here.

The 16th Sort has been long preſerved in ſeveral curious Gardens in *England*. It grows naturally in the *Canary* Iſlands; this hath a ſtrong fibrous Root, from which ariſe ſeveral twining woody Stalks, dividing into many ſmaller; theſe, where they have Support, will grow more than 20 Feet high, and are garniſhed with oblong Heart-ſhaped Leaves, which are ſoft and hairy. The Flowers are produced from the Wings of the Leaves, ſeveral ſtanding upon one Foot Stalk; theſe are for the moſt part of a pale blue, but there is a Variety of it with white Flowers. This Plant flowers in *June*, *July*, and *Auguſt*, and ſometimes ripens Seeds here; but as the Plants are eaſily propagated by Layers, and from Cuttings, the Seeds are not ſo much regarded, nor indeed will thoſe Plants which are raiſed by Layers, or Cuttings, produce Seeds, though thoſe which come from Seeds ſeldom fail. As the Leaves of this Plant continue green all the Year, they make a pretty Variety in Winter in the Green-houſe, for it will not live abroad in Winter in this Country, though it only requires the ſame Protection as Myrtles, and other hardy Green-houſe Plants. It may be propagated by laying down the young Shoots in Spring, which generally put out Roots in 3 or 4 Months, then they may be taken from the old Plants, and each planted in a Pot filled with light Earth, and placed in the Shade till they have taken new Root, after which they may be placed with other hardy Green-houſe, Plants till Autumn, when they ſhould be removed into the Green-houſe, and afterward treated as Myrtles, and other Green-houſe Plants. If the tender Cuttings of this are planted during any of the Summer Months, in Pots filled with light Earth, and plunged into a moderate hot Bed, ſhading them from the Sun, they will take Root, and afterward ſhould be treated as the Layers.

The 17th Sort is an annual Plant the Seeds of it were ſent me from *Jamaica*, where it grows naturally; this riſes with a very ſlender twining Stalk, 4 or 5 Feet high, garniſhed with triangular Leaves, which are pointed. The Flowers grow in Cluſters, ſitting cloſe to the Stalks, which are blue, and are ſucceeded by Seeds, like thoſe of the 4th Sort. This Sort will not ripen Seeds in *England*, unleſs the Plants are brought forward on a hot Bed in the Spring, and afterward placed in a Glaſs Caſe, where they may be defended from Cold.

The 18th Sort grows naturally in *Jamaica*, from whence the Seeds were ſent me. This is one of the moſt beautiful Kinds, the Flowers being very large, and of a fine Roſe Colour. It riſes with a winding Stalk, 7 or 8 Feet high, which is garniſhed with Heart-ſhaped Leaves, ending in long ſharp Points, ſitting upon very long Foot Stalks. The Flowers alſo have long Foot Stalks, each ſupporting 2 Flowers, whoſe Empalement is divided deeply into 5 Parts; the Seeds are large, and covered with a fine Down. This is an annual Plant, which is too tender to thrive in the open Air in this Country, ſo the Seeds ſhould be ſown on a hot Bed in Spring, and the Plants afterward treated as directed for the 8th Sort.

The 19th Sort grows naturally near the Sea at *Campeachy*, from whence I received the Seeds; this hath ſtrong, ſmooth, winding Stalks, which ſend out Roots at their Joints; theſe are garniſhed with Arrow-pointed Leaves, whoſe Ears (or Lobes) are obtuſe; the Flowers are large, of a Sulphur Colour, and ſit upon very long Foot Stalks, which proceed from the Side of the Stalks, each ſupporting one Flower, with a large ſwelling Empalement; theſe are ſucceeded by large, ſmooth, oval Capſules, having 3 Cells, each including one large ſmooth Seed. This is a perennial Plant, whoſe Stalks extend to a great Diſtance, and put out Roots at the Joints, whereby it propagates in Plenty, but is too tender to thrive in *England*, unleſs preſerved in a warm Stove, where it requires more Room, than can well be allowed to one Plant. It muſt be treated as the 8th Sort.

The 20th Sort grows naturally in *Africa*, from whence the Seeds were ſent to the Royal Garden at *Paris*, and from whence I received it in 1730; this riſes with a ſlender winding Stalk, 5 or 6 Feet high, garniſhed with Heart-ſhaped Arrow-pointed Leaves, the Flowers ſtand on long ſlender Foot Stalks; theſe are white, with purple Bottoms. This Sort may be treated in the ſame Manner as the common great *Convolvulus*.

This 21ſt Sort grows naturally in *Spain* and *Italy*; this is an annual Plant, riſing about 2 Feet high, with ſlender twining Stalks, garniſhed with oval Leaves. The Flowers are ſmall, and of a bluiſh Colour, each Foot Stalk ſupporting one Flower of little Beauty, ſo is not often cultivated in Gardens. If the Seeds are permitted to ſcatter, the Plants will riſe in Spring, and require no Culture but to keep them clean from Weeds; or if they are ſown in Spring where the Plants are to remain, they will flower in *June*, and the Seeds ripen in *Auguſt*.

The 22d Sort grows naturally in *Sicily*, and the Iſlands of the *Archipelago*; this hath a perennial Root, which ſends out many ſlender ſtiff Stalks, twiſting themſelves round the neighbouring Plants, and riſe 5 or 6 Feet high; theſe are garniſhed with Leaves divided into 5 or 7 narrow Lobes, and are of a ſoft Texture, like Sattin, ſtanding on ſhort Foot Stalks. The Flowers are produced from the Side of the Stalks, upon long Foot Stalks, which ſuſtain 2 Flowers of a pale Roſe Colour, with 5 Stripes of a deeper red. This Sort creeps at the Root; ſo ſeldom produces Seeds in *England*, but is propagated by the Shoots taken from the old Plants; the beſt Time for parting and tranſplanting theſe Plants, is about the Beginning of *May*, when they may be taken out of the Green-houſe, and expoſed in the open Air; but the young Plants which are ſeparated from the old ones, ſhould be placed under a Frame, and ſhaded from the Sun till they have taken new Root, after which they muſt be gradually hardened to bear the open Air, to which they muſt be expoſed all the Summer; but in Autumn they muſt be placed in the Green-houſe, and treated as the *Canary Convolvulus* before-mentioned.

The 23d Sort hath ſome Appearance of the 22d, and hath been ſuppoſed to be the ſame Species by ſome Writers, but I have cultivated both many Years, and never have found either of them alter, ſo make no Doubt of their being diſtinct Plants. This Sort hath a perennial Root like the former, which ſends out many weak twining Stalks, riſing about 3 Feet high, twiſting about the Plants which ſtand near it, or about each other, and if they have no other Support, fall to the Ground; theſe are garniſhed with Leaves of different Forms, ſome are ſhaped almoſt like thoſe of Betony, being ſlightly cut on their Edges, others are almoſt Heart-ſhaped, and are deeply cut on the Sides, and ſome are cut to the Mid-rib; they have a ſhining Appearance like Sattin, and are ſoft to the Touch, ſtanding on ſhort Foot Stalks. The Flowers are produced on the oppoſite Side from the Leaves, having very long Foot Stalks, each ſuſtaining 2 Flowers of a pale Roſe Colour, very like thoſe of the former Species. It flowers in *June*, *July*, and *Auguſt*, but rarely ripens Seeds in *England*. It hath a perennial Root, which ſends out Offſets, by which it is propagated in *England* as the laſt mentioned, and the Plants treated the ſame Way.

The 24th Sort grows naturally in *Portugal*, but hath been long cultivated in the Flower Gardens in *England* for Ornament; this is titled *Convolvulus Minor*, by the Seedſmen and Gardeners. It is an annual Plant, which hath ſeveral thick herbaceous Stalks, growing about 2 Feet long, which do not twine like the other Sorts, but decline toward the Ground, upon which many of the lower Branches lie proſtrate; theſe are garniſhed with Spear-ſhaped Leaves, which ſit cloſe to the Branches; the Foot Stalks of the Flowers come out juſt above the Leaves at the ſame Joint, and on the ſame Side of the Stalks; theſe are about 2 Inches long, each ſuſtaining one large open Bell-ſhaped Flower, which in ſome is of a fine blue Colour, with a white Bottom; in others they are pure white, and ſome are beautifully variegated with both Colours. The white Flowers are ſucceeded by white Seeds, and the blue by dark coloured Seeds, and this Difference is pretty conſtant in both; but thoſe Plants with variegated Flowers, have frequently plain Flowers of both Colours, intermixed with the ſtriped, therefore the only Method to continue the variegated Sort, is to pull off all the plain Flowers when they appear, never ſuffering any of them to remain for Seed.

This Sort is propagated by Seeds, which ſhould be ſown on the Borders of the Flower Garden, where they are deſigned to remain. The uſual Method is to put two or three Seeds in each Place, where they are intended to flower, covering them half an Inch with Earth; and when the Plants come up, if the Seeds all grow, there ſhould be but two left in each Place, which will be ſufficient, the others ſhould be drawn out carefully, ſo as not to diſturb the Roots of thoſe which are left. After which they will require no other Culture, but to keep them clean from Weeds. If the Seeds are ſown in Autumn, the Plants will flower in *May*, but thoſe ſown in Spring, will not flower till about the Middle of *June*, and will continue flowering till the Froſt ſtops them. The Seeds ripen in *Auguſt* and *September*.

The 25th Sort grows naturally in *Italy* and *Sicily*; this hath a perennial Root, which runs deep in the Ground, from which ariſe 2 or 3 upright branching Stalks, near 3 Feet high, garniſhed with narrow Leaves about 2 Inches long, which ſit cloſe to the Stalks; the Foot Stalks of the Flower proceed from the ſame Place, theſe are 4 or 5 Inches long, each ſuſtaining 4 or 5 Flowers, of a pale Roſe Colour, which ſpread open almoſt flat. This flowers in *June* and *July*, but ſeldom produces good Seeds in *England*. It is propagated by Seeds, which muſt be obtained from the Countries where it naturally grows; theſe ſhould be ſown upon a warm dry Border, where they are deſigned to remain: For as the Plants run down with long tap Roots, they will not bear tranſplanting, for I have often made Trial of this, without any Succeſs. When the Plants come up, they ſhould be thinned where they grow too cloſe, and conſtantly kept clean from Weeds, which is all the Culture they require. It flowers in *July* and *Auguſt*, and the Stalks decay in Autumn; but the Roots will laſt ſeveral Years, and if they are in a dry Soil and warm Situation, will abide the Winter very well without covering. I have received a Variety of this from *Nice*, where it grows naturally, with broader Leaves, which are hairy. The Flowers are placed all toward the Top of the Stalk, upon long Foot Stalks, growing many together very cloſely joined: But I cannot be ſure if it is not a ſeminal Variation, for it was ſent me by the ſame Title.

The 26th Sort grows naturally in *France*; this hath a perrennial creeping Root, from which ariſe ſeveral ſhort branching Stalks, about 4 Inches high, garniſhed with Spear-ſhaped ſilky Leaves; the Flowers are produced on the Side, and at the Top of the Stalks; in ſmall Cluſters, ſitting cloſe together; theſe are much ſmaller than thoſe of the former Sort, but are of a deeper Roſe Colour: This ſeldom produces Seeds in *England*, but the Roots propagate in Plenty. It delights in a light dry Soil; and requires no Care but to keep the Plants clean from Weeds, it may be tranſplanted either in the Spring or Autumn. This is by ſome ſuppoſed the ſame as the laſt Sort, but whoever has cultivated them, can have no Doubt of their being different Species.

The 27th Sort grows naturally in *Italy*, *Sicily*, and the Iſlands in the *Archipelago*; it riſes with upright ſhrubby Stalks about 3 Feet high, cloſely garniſhed with blunt Spear-ſhaped ſilky Leaves, placed on every Side the Stalks, they are near two Inches long, and a Quarter broad, rounding at their Ends. The Flowers are produced in Cluſters at the Top of the Stalks, ſitting very cloſe, they are of a pale Roſe Colour, and come out in *June* and *July*, but do not perfect Seeds in *England*. This Plant will live in the open Air in mild Winters, if planted in a light Soil, and warm Situation; but in hard Winters it is deſtroyed; therefore the Plants ſhould be kept in Pots, and ſheltered under a common Frame in Winter, where it may enjoy the free Air in mild Weather, and be protected from the Froſt, and in Summer placed abroad with other hardy exotick Plants, where it's fine ſilky Leaves, will make a pretty Appearance. It may be propagated by laying down the Branches, alſo by Cuttings, but both very ſeldom put out Roots the ſame Year, and many of them will fail, ſo the beſt Way is to procure the Seeds from *Italy*, for thoſe Plants which come from Seeds, grow much larger than thoſe from Layers or Cuttings.

The 28th Sort grows naturally in *Candia*, and ſeveral Iſlands of the *Archipelago*; this hath a perennial Root, which ſends up ſeveral erect branching Stalks about 2 Feet high, garniſhed with very narrow pointed Leaves, ſitting cloſe to the Stalks, which are hoary. The Flowers come out ſingly on the Side of the Stalks ſitting very cloſe, having ſcarce any Foot Stalks, theſe are of a very pale bluiſh Colour, and ſpread open almoſt to the Bottom. It flowers in *June* and *July*, but rarely produces Seeds in *England*.

This Sort is propagated as the 25th, and the Plants require the ſame Treatment. This muſt have a dry Soil and warm Situation, otherwiſe it will not live through the Winter in the open Air in *England*. As the Stalks decay in Autumn, if the Surface of the Ground about their Roots is covered with ſome old Tanners Bark, it will preſerve them in the hardeſt Froſts.

The 29th Sort grows naturally in both *Indies*; this is an annual Plant, which ſends out ſeveral weak Stalks from the Root, inclining to the Ground, garniſhed with oval Leaves, ſitting cloſe to the Stalks, they are about the Size of Chickweed Leaves, but are hairy, and are placed alternate on the Branches, the Flowers are ſmall, of a light blue, two growing on each Foot Stalk, theſe are ſucceeded by ſmall round Capſules divided into 3 Cells, which contain the Seeds; it flowers in *July* and *Auguſt*, and the Seeds ripen in Autumn.

This Sort is very tender, ſo the Seeds ſhould be ſown on a hot Bed in Spring, and when fit to remove, ſhould be each tranſplanted into a ſmall Pot and plunged in a hot Bed, obſerving to ſcreen them from the Sun till they have taken freſh Root; after which they muſt be treated as the other tender Sorts.

The 30th Sort is uſed in Medicine, and is ſtyled *Soldanella*, and *Braſſica marina*; it grows naturally on the Sea Beaches in many Parts of *England*, but cannot be long preſerved in a Garden. This hath many ſmall white ſtringy Roots, which ſpread wide and ſend out ſeveral weak trailing Branches, which twine about the neighbouring Plants like the common Bindweed; they are garniſhed with Kidney-ſhaped Leaves, about the Size of thoſe of the leſſer *Celandine*, ſtanding upon long Foot Stalks, and placed alternate. The Flowers are produced on the Side of the Branches, at each Joint. Theſe are ſhaped like thoſe of the 1ſt Sort, and are of a reddiſh purple Colour, they appear in *July*, and are ſucceeded by round Capſules having three Cells, each containing one black Seed; every Part of the Plant, abounds with a milky Juice. This is eſteemed a good Medicine to purge off watery Humours, and is preſcribed in Dropſies.

The 31ſt Sort grows naturally in the Iſland of *Ceylon*; this is a perennial Plant, having thick fleſhy Roots, which ſpread far in the Ground, and abound with a milky Juice, which flows out when the Roots are broken or wounded, and ſoon hardens into a reſinous Subſtance, when expoſed to the Sun and Air. From the Root ſhoots forth many twining Branches, which twiſt about the neighbouring Plants. Theſe are garniſhed with Heart-ſhaped Leaves, ſoft to the Touch, like thoſe of the Marſh Mallow. The Flowers are produced at the Joints on the Side of the Stalks, ſeveral ſtanding together on the ſame Foot Stalk; they are white, and ſhaped like thoſe of the common great Bindweed. Theſe are ſucceeded by round Capſules, having three Cells, which contain two Seeds in each.

The Roots of this Plant, which is the only Part uſed in Medicine, are brought to us from *India*. It is titled *Turpethum*, or *Turbith* in the Shops.

This Plant is tender, ſo will not live in the open Air in *England*; it is propagated by Seeds, ſown on a hot Bed; and when the Plants are fit to remove, they ſhould be each planted in a Pot, and plunged into a hot Bed of Tanners Bark, and ſcreened from the Sun, till they have taken freſh Root, and afterward muſt be treated as hath been directed for the 8th Sort.

The 32d Sort is the Jalap which is uſed in Medicine. This grows naturally at *Haleppo*, in the *Spaniſh Weſt-Indies*, ſituated between *La Vera Cruz* and *Mexico*. The Root of this Plant hath been long uſed in Medicine, but it was not certainly known, what Plant was produced from it. The old Title of this was *Mechoacana nigra*, but Father *Plumier* aſſerted that it was the Root of one Species of Marvel of *Peru*, from whence *Tournefort*, was induced to conſtitute a Genus of that Plant under the Title of *Jalapa*. But Mr. *Ray*, from better Information, put it among the *Convolvuli*, and titled it, *Convolvulus Americanus*, *Jalapium dictus*. This was by the late Dr. *Houſtoun*, certainly aſcertained, who brought ſome of the Roots of this Plant, from the *Spaniſh Weſt-Indies* to *Jamaica*, where he planted them, with a Deſign of cultivating the Plants in that Iſland, where he obſerved them to thrive, during his abode there: But ſoon after he left the Country, the Perſon to whoſe Care he committed them, was ſo careleſs, as to ſuffer Hogs to root them out of the Ground, and deſtroy them, ſo that there were no Remains of them left, when he returned there; nor have I heard of this Plant being introduced into any of the *Britiſh* Iſlands ſince.

A few Years paſt I received the Seeds of this Plant, which have ſucceeded in the *Chelſea* Garden, where the Plants thrive very well, but have not as yet produced any Flowers. This hath a large Root of an oval Form, which is full of a milky Juice; from which come out many herbaceous twining Stalks, riſing 8 or 10 Feet high, garniſhed with variable Leaves, ſome being Heart-ſhaped, others angular, and ſome oblong, and pointed. They are ſmooth, and ſtand upon long Foot Stalks, and from a Drawing of the Plant, made by a *Spaniard* in the Country, where it grows naturally; who gave it to Dr. *Houſtoun*, and is now in my Poſſeſſion; the Flowers are ſhaped like thoſe of the common Great Bindweed, each Foot Stalk ſupporting one Flower. As it is only a Pencil Drawing, the Colour is not expreſſed; therefore I can give no farther Account of it, till the Plants in the *Chelſea* Garden flower, which may be ſoon expected, as they are very ſtrong. The Seeds are covered with very white Down like Cotton.

As this Plant is a Native of a warm Country, it will not thrive in *England*, unleſs preſerved in a warm Stove; therefore the Seeds muſt be ſown on a hot Bed, and the Plants put into Pots, and plunged in a hot Bed of Tanners Bark, and treated as the 8th Sort, with this Difference only: That as this hath large fleſhy ſucculent Roots, they ſhould have but little Water given them, eſpecially in Winter, leſt it cauſe them to rot. They ſhould be planted in light ſandy Earth not too rich, for the ſame Reaſon; and the Plants ſhould always remain in the Bark Stove.

The Root of Jalap is eſteemed an excellent Cathartic Medicine, purging ſerous, watry Humours eſpecially, and is of ſingular Service in Dropſies, and for Rheumatick Diſorders. The Quantity of the Root which is uſed in Medicine, is not ſufficient to render the Introduction of this Plant into the *Britiſh* Colonies, a Matter of great Concern. But ſince the Diſtillers and Brewers, have found out it's Uſe for exciting a Fermentation; the Conſumption of it is now ſo great, that it would become a national Benefit, if produced in the *Britiſh* Iſlands; which might be ſoon effected were the Inhabitants of thoſe Iſlands, a little more attentive to their own, and the public Benefit.

CONYZA. *Lin. Gen. Plant.* 854. *Tourn. Inſt. R. H.* 454. *Tab.* 259. Flea-bane in *French Coniſe.*

The *Characters* are,

It hath a compound Flower, made up of many hermaphrodite Florets, which compoſe the Diſk; and female half Florets ranged round the Border, and form the Rays; the hermaphrodite Florets are Funnel-ſhaped, and cut into five Parts at the Brim, which ſpread open, theſe have each five ſhort hairy Stamina, terminated by cylindrical Summits; in the Bottom of each Floret is ſituated a Germen ſupporting a ſlender Style, crowned by a bifid Stigma. The female half Florets or Rays, are Funnel-ſhaped, and cut into 3 Parts at the Top; theſe have a Germen, with a ſlender Style, terminated by two ſlender Stigmas but have no Stamina. All theſe are included in a common ſcaly Empalement, which is oblong and ſquare; the Scales are pointed, and the outer ones ſpread open. The hermaphrodite and female Florets, are each ſucceeded by one oblong Seed, crowned with Down, ſitting upon a plain Receptacle, and are included in the Empalement.

The *Species* are,

1. CONYZA *foliis lanceolatis acutis, caule annuo corymboſo. Hort. Cliff.* 405. Flea-bane with pointed Spear-ſhaped Leaves, and an annual Stalk, and Flowers growing in roundiſh Bunches. This is the *Conyza major vulgaris. C. B. P.* 265. Common greater Flea-bane.

2. CONYZA *foliis ovato oblongis, amplexicaulibus. Hort. Cliff.* 405. Flea-bane with oblong oval Leaves embracing the Stalks. *Conyza Pyrenaica, primulæ veris folio. Par. Bat.* 127. *Pyrenian* Flea-bane with a Primroſe Leaf.

3. CONYZA *foliis ovatis tomentoſis, floribus confertis, pedunculis lateralibus terminalibuſque. Hort. Cliff.* 405. Flea-bane with oval woolly Leaves, Flowers growing in Cluſters, and Foot Stalks proceeding from the Sides and terminating the Stalks. This is the *Conyza Cretica fruticoſa. Tourn. Cor.* 33. Shrubby Flea-bane of *Crete*, with ſoft woolly Leaves, which are very white.

4. CONYZA *foliis haſtatis ſcabris, caule erecto ramoſo, perenni, floribus corymboſis.* Flea-bane with Halbert-pointed rough Leaves, an upright branching perennial Stalk, and Flowers growing in round Bunches. This is the *Conyza arboreſcens lutea, folio trifido. Plum. Cat.* 9. Yellow Tree-like Flea-bane with a trifid Leaf.

5. CONYZA *arboreſcens, tomentoſa, foliis oblongis, floribus in ſummitatibus racemorum, ramoſis ſparſis albicantibus. Houſt. Mſſ.* Woolly Tree Flea-bane with oblong Leaves, Flowers at the End of the Branches, which are whitiſh and grow in looſe Bunches.

6. CONYZA *foliis linearibus decurrentibus ſerratis, floribus corymboſis terminalibus.* Flea-bane with narrow running Leaves, and Flowers in round Bunches terminating the Stalks. This is the *Conyza herbacea, Salicis folio, floribus umbellatis purpureis minoribus. Houſt. Mſſ.* Herbaceous Flea-bane with a winged Stalk a Willow Leaf, and ſmaller purple Flowers growing in Umbels.

7. CONYZA *arboreſcens, foliis oblongis floribus ſingulis tribus floſculis conſtantibus. Houſt. Mſſ.* Tree Flea-bane with oblong Leaves, and each Flower conſtantly compoſed of three Florets.

8. CONYZA *caule herbaceo, foliis ovatis ſerratis, villoſis, floribus alaribus & terminalibus.* Flea-bane with an herbaceous Stalk, oval, ſawed, hairy Leaves, and Flowers proceeding from the Sides and at the End of the Branches. This is the *Conyza odorata, Bellidis folio villoſa & viſcoſa. Houſt. Mſſ.* Sweet ſmelling Flea-bane, with a Daizy Leaf, which is viſcous and hairy.

9. CONYZA *fruticoſa, flore pallide purpureo, capitulis & lateribus ramulorum ſpicatum exeuntibus. Sloan. Cat. Jam.* 124. Shrubby Flea-bane with a pale purple Flower growing in Spikes from the Side and Top of the Branches.

10. CONYZA *foliis oblongo ovatis ſcabris, floribus racemoſis terminalibus, caule herbaceo.* Flea-bane with oblong, oval, rough Leaves, Flowers growing in Bunches at the Ends of the Branches and an herbaceous Stalk. This is the *Conyza Symphyti facie, flore luteo. Houſt. Mſſ.* Flea-bane with a Comfrey Leaf and a yellow Flower.

11. CONYZA *Americana ſcandens, Lauri folio aſpero,*

floribus ſpicatis albis. Houſt. Mſſ. American Climbing Flea-bane with a rough Bay Leaf, and white Flowers growing in Spikes.

12. Conyza *Americana fruteſcens, foliis ovatis trinerviis & integris, floribus ſpicatis albis. Houſt. Mſſ.* Shrubby *American* Flea-bane, with oval entire Leaves having three Nerves and white Flowers in Spikes.

13. Conyza *Americana fruteſcens foliis oblongis acutis, capitulis & ramulorum exeuntibus, calycibus purpuraſcentibus. Houſt. Mſſ.* Shrubby *American* Flea-bane, with oblong pointed Leaves, Heads growing on the Side of the Branches, with purple Cups.

14. Conyza *fruticoſa foliis ovatis trinerviis, floribus ſpicatis alaribus.* Shrubby Flea-bane with oval Leaves having three Nerves, and Flowers growing in Spikes from the Side of the Branches.

15. Conyza *foliis ovato lanceolatis trinerviis, pedunculis longiſſimis terminalibus floribus corymboſis.* Flea-bane with oval Spear-ſhaped Leaves, having three Veins, Foot Stalks which are very long, terminating the Branches, and Flowers growing in round Bunches.

16. Conyza *foliis ovato oblongis, obtuſis ſerratis, ſemiamplexicaulibus, floribus corymboſis terminalibus.* Flea-bane with oblong oval Leaves, which are obtuſe and ſawed, half embracing the Stalks with their Baſe, and Flowers in round Bunches terminating the Stalks. This is the *Eupatorium Conyzoides Sinica Baccharidis folio rarius crenato, ſummo caule ramoſo, floribus parvis coronato. Pluk. Amath.* 80. *China* Hemp Agrimony like Flea-bane, with a Ploughman's Spikenard Leaf rarely crenated, the upper Part of the Stalk branching, and crowned with ſmall Flowers.

17. Conyza *major odorata ſive Baccharis, floribus purpureis nudis. Sloan. Cat. Jam.* 121. Greater ſweet ſcented Flea-bane or *Baccharis,* with naked purple Flowers.

The 1ſt Sort grows naturally upon dry Places in ſeveral Parts of *England*. This is a biennial Plant, which decays ſoon after the Seeds are ripe; it hath ſeveral large oblong pointed Leaves, growing near the Ground, which are hairy, between theſe, the Stalks come out, which riſe more than 2 Feet high, which divide upward into ſeveral Branches. Theſe are garniſhed with ſmaller oblong Leaves, ſtanding alternate; at the Ends of the Stalks, the Flowers are produced in round Bunches, which are of a dirty yellow Colour, theſe are ſucceeded by oblong Seeds, crowned with Down. It flowers in *July*, and the Seeds ripen in Autumn. If the Seeds are permitted to ſcatter, the Plants will come up the following Spring, and require no other Care but to keep them clean from Weeds.

The 2d Sort grows naturally on the Mountains in *Italy*, and is preſerved in Botanick Gardens for Variety. This hath a perennial Root but an annual Stalk, which decays every Autumn. From a thick fibrous Root, ariſe many upright Stalks, garniſhed with oblong, oval Leaves, which are rough, and embrace the Stalks with their Baſe, theſe have Appendages running along the Stalk, from one to the other, whereby the Stalk is winged. The upper Part of the Stalk divides into many ſmaller Branches, garniſhed with Leaves of the ſame Form, but ſmaller, ſtanding alternate; the Branches and main Stalks are terminated by yellow Flowers growing in round Bunches; theſe are ſucceeded by oblong Seeds crowned with Down. It flowers in *July*, and the Seeds ripen in Autumn. This is propagated by Seeds, which may be ſown on a Bed of light Earth in Spring, and when the Plants come up, they ſhould be thinned where they are too near, and kept clean from Weeds; the following Autumn, they may be tranſplanted where they are deſigned to remain, and require no other Care but to keep them clean from Weeds. The 2d Year they will flower and produce ripe Seeds, and continue ſeveral Years if the Soil is not too good, for they often rot, when planted in a rich Soil.

The 3d grows naturally in *Crete*. This hath a ſhort ſhrubby Stalk, which in this Country ſeldom riſes more than ſix Inches high, dividing into ſeveral ſhort Branches, cloſely garniſhed with oval woolly Leaves, which are very white; from theſe Branches ariſe the Flower Stalks, which are woolly and riſe about nine Inches high, garniſhed with ſmall oval white Leaves placed alternate. The Flowers are produced at the Sides, and End of the Stalk, ſometimes but one, at other Times two, and ſometimes three Flowers ſtanding on the ſame Foot Stalk. They are of a dirty yellow Colour, and appear in *July*, but rarely are ſucceeded by Seeds, ſo the Plant is propagated here by Slips, which, if taken from the old Plants in *June*, and planted on an Eaſt aſpected Border, and covered with Hand Glaſſes, will take Root in 6 or 8 Weeks. But theſe Slips muſt be frequently, but gently refreſhed with Water, and the Glaſſes ſhould be ſhaded in hot Weather, and after they have been planted a Fortnight, the Glaſſes ſhould be raiſed on one Side to admit Air to the Cuttings; when they have taken Root, they ſhould be gradually expoſed to the open Air. In Autumn theſe ſhould be carefully taken up, preſerving the Earth to their Roots, ſome of them may be planted in Pots, that they may be ſheltered under a Frame in Winter; and others may be planted in a warm Border of dry, poor Earth, where they will endure the Cold of our ordinary Winters very well, and continue many Years. This is preſerved in Gardens, more for the Beauty of its ſilvery Leaves, than its Flowers, which have not much to recommend them.

The 4th Sort grows naturally in *Jamaica*. This is titled, by Sir *Hans Sloane*, *Virga aurea major, ſ. Herba Doria folio ſinuato hirſuto. Cat. Jam.* 125. This riſes with a ſhrubby Stalk, 7 or 8 Feet high, dividing into ſeveral Branches, clothed with rough Leaves, ſhaped like the Point of a Halbert, and are about four Inches long. The Flowers are produced in roundiſh Bunches, at the Extremity of the Branches; they are yellow, and ſtand cloſe together. Theſe are ſucceeded by oblong Seeds crowned with Down.

This Plant is too tender to thrive in the open Air in this Country, therefore the Seeds muſt be ſown upon a hot Bed, and when the Plants are fit to remove, they muſt be each tranſplanted into a ſmall Pot filled with light ſandy Earth, and plunged into a hot Bed, obſerving to ſcreen them from the Sun till they have taken new Root, then they muſt have free Air admitted every Day, in Proportion to the Warmth of the Seaſon; they muſt alſo be frequently watered in warm Weather, but they ſhould not have it in too great Plenty As the Plants advance in Strength, they muſt have a greater Share of Air; and if the Seaſon is warm, they may be expoſed to the open Air, for a few Weeks in the Heat of Summer, provided they are placed in a warm Situation; but if the Nights prove cold, or much Wet ſhould fall, they muſt be removed into Shelter; if theſe Plants are placed in a moderate Stove in Winter, they will thrive better, than in greater Heat, and in Summer they ſhould have a large Share of Air. With this Management I have had the Plants flower well in *July*, though they have not perfected Seeds here.

The 5th Sort riſes with a woody Stalk 10 or 12 Feet high, dividing into many Branches, whoſe Bark is covered with a brown Down; theſe are garniſhed with oblong, oval Leaves, green on their upper Side, but of an Aſh Colour on their under Side, placed alternate on ſhort Foot Stalks. The Flowers are produced at the End of the Branches, on long branching Foot Stalks, in looſe Spikes ranged on one Side; they are white, and ſucceeded by long flat Seeds crowned with Down. This Plant grows naturally at *La Vera Cruz* in *New Spain*. It is a tender Plant, ſo muſt be treated as hath been directed for the former Sort.

The 6th Sort grows naturally at *La Vera Cruz*. This hath a perennial Root, from which ariſe ſeveral upright Stalks 3 Feet high, garniſhed with long narrow Leaves, ſawed on their Edges, placed alternate, and have Appendages which run along the Stalk from one to the other, forming a Border or Wing to the Stalks. The Flowers are produced at the Ends of the Stalks, in round Bunches, they are ſmall, of a purple Colour, and are ſucceeded by oblong flat Seeds, crowned with a Down. This is propagated by Seeds which muſt be ſown upon a hot Bed in Spring, and the Plants muſt be tranſplanted into Pots, and plunged in a freſh hot Bed, obſerving to ſcreen them from the Sun till they have taken freſh Root, after which, they muſt have a large Share of Air, and about Midſummer, they may be placed in the open Air in a ſheltered Situation, where they may remain till the End of *September*, when they ſhould be removed into the Stove, and during the Winter kept in a temperate Degree of Warmth. The 2d Year theſe Plants will flower, but they do not perfect Seeds in *England*.

The 7th Sort was ſent me from *La Vera Cruz*. This hath a ſtrong woody Stem, which riſes to the Height of 14 or 16 Feet, covered with an Aſh coloured Bark, and is divided upward into many ligneous Branches, garniſhed with Spear-ſhaped Leaves ſtanding alternate on ſhort Foot Stalks. Theſe Branches are terminated by roundiſh Bunches of white Flowers, ſitting on long Foot Stalks, ſeveral of them being joined on the ſame Foot Stalk. As theſe are not ſucceeded by Seeds in *England*; the Seeds muſt be procured from abroad, and theſe muſt be ſown on a hot Bed, and the Plants afterward treated as the 4th Sort.

The 8th Sort grows naturally at *La Vera Cruz*; this is an annual Plant, which grows in low moiſt Places, where the Water ſtands in Winter; it hath an herbaceous, branching Stalk, which riſes about one Foot high, garniſhed at each Joint, with one oval Leaf, ſitting cloſe to the Branches; theſe are ſawed on their Edges, and covered with a white, hairy Down. The Flowers are produced from the Side of the Branches, on ſlender Foot Stalks, each for the moſt part ſuſtaining three Flowers, which are white, and are ſucceeded by chaffy Seeds, crowned with Down; the whole Plant is viſcous, and will ſtick to the Fingers of thoſe who handle it.

The Seeds of this muſt be ſown on a hot Bed in Spring, and when the Plants are fit to remove, they ſhould be each tranſplanted in a Pot, and plunged into a freſh hot Bed, and treated as the other tender Sorts, but muſt have a large Share of Air in warm Weather, and frequently refreſhed with Water. In *July* theſe Plants will flower, and if the Autumn proves favourable, they will ripen their Seeds; a Plant or two of this Sort may be preſerved for Variety, but there is little Beauty in it.

The 9th Sort grows naturally in *Jamaica*, from whence the Seeds were ſent me; this riſes with a ſhrubby Stalk, 6 or 7 Feet high, dividing into many ligneous Branches, which have a meally Bark, and are garniſhed with Spear-ſhaped Leaves, ſitting cloſe to the Branches; they are hairy, and of a Silver Colour on their under Side, and are placed alternate. The Flowers come out from the Side of the Branches, generally in looſe Spikes, which grow horizontal, and the Flowers ſtand on the upper Side erect, but ſometimes they come out ſingle, ſitting cloſe between the Leaf and Branch; theſe are of a pale purple Colour; and are ſucceeded by chaffy Seeds, crowned with a Down.

This Sort is propagated by Seeds, which muſt be obtained from the Country where it grows naturally, for it doth not produce Seeds in *England*, though it has flowered ſeveral Years in the *Chelſea* Garden; the Seeds muſt be ſown, and the Plants treated as the 4th Sort.

The 10th Sort grows naturally at *La Vera Cruz*; this hath a perennial Root, and an annual Stalk. It grows about 3 Feet high, the Leaves are from 4 to 5 Inches long, and one and a Half broad in the Middle, and are rough like thoſe of Comfrey. The Stalks are terminated by branching Flower Stalks, each Foot Stalk ſuſtaining ſeveral yellow Flowers, not much unlike thoſe of the common Sort. This is propagated by Seeds as the 6th Sort, and the Plants muſt be treated in the ſame Way. It will flower the 2d Year, but it doth not ripen Seeds in *England*.

The 11th Sort was ſent me from *La Vera Cruz*; this hath a climbing ſhrubby Stalk, which riſes 14 or 16 Feet high, and divides into many Branches, garniſhed with Leaves about the Size of thoſe of the Bay Tree, and full as thick in their Texture, having many deep tranſverſe Nerves, running from the Mid-rib to the Sides; they are of a pale green Colour. The Flowers are produced in long Spikes, which come out from the Side of the Branches, and are reflexed, but the Flowers are ranged on the upper Side, pointing upward; theſe are large and white, and are ſucceeded by flat dark coloured Seeds, crowned with Down.

This Plant makes a fine Appearance in the Stove when in flower, and as it retains its Leaves all the Year, in the Winter Seaſon it affords an agreeable Variety among other tender Plants. The Culture of this Plant is the ſame as hath been directed for the 4th Sort.

The 12th Sort was ſent me from *Carthagena*, in *New Spain*, where it grows naturally; this riſes with a ſhrubby Stalk, 6 or 7 Feet high, dividing into ſeveral ligneous Branches, garniſhed with oval ſmooth Leaves, having three longitudinal Veins, and are entire; theſe are placed alternate, and cloſe to the Branches. The

Flowers are produced in ſhort cloſe Spikes at the End of the Branches; theſe are white, and are ſucceeded by oblong flat Seeds, crowned with Down; this Sort is tender, ſo muſt be treated as the 4th, and will abide ſeveral Years with that Management.

The 13th Sort grows naturally in the ſame Country as the laſt, this riſes with a ſhrubby Stalk, 8 or 10 Feet high, dividing into many long ſlender Branches, garniſhed with Spear-ſhaped Leaves, ending in acute Points; theſe are about 3 Inches long, and 3 Quarters of an Inch broad in the Middle; the ſmaller Branches are ſet with very narrow, oblong, pointed Leaves, which grow cloſe to the Stalks, and at each Joint is produced one pretty large, white Flower, with a purple Empalement; theſe Flowers come out the whole Length of the ſmall Branches, ſitting cloſe to the Baſe of the Leaves, ſo that the Plants make a pretty Appearance in flower. This Sort may be propagated as the 4th, and with that Management it hath flowered very well, but doth not produce Seeds in *England.*

The 14th Sort was ſent me from *Carthagena* where it grows in great Plenty; this hath a ſtrong woody Stem, riſing 10 or 12 Feet high, and divides upward into many ſhort ligneous Branches, whoſe Joints are very cloſe to each other. The Leaves come out alternate on every Side the Branches, to which they ſit very cloſe; they are one Inch long, and Half an Inch Broad, ending in acute Points; theſe are ſmooth, and have 3 longitudinal Veins. The Flowers are produced in ſhort cloſe Spikes, which come out from the Side of the Branches; they are white, inclining to a purple, and are ſucceeded by oblong flat Seeds, crowned with Down. This is a tender Plant, ſo requires the ſame Treatment as the fourth Sort, with which it hath flowered very well, but hath not produced Seeds in *England.*

The 15th Sort riſes with a ſhrubby Stem, 6 or 7 Feet, dividing into ſeveral Branches, which have a dark brown Bark, and are cloſely garniſhed with oval, Spear-ſhaped, ſmooth Leaves, having 3 longitudinal Veins; theſe have ſhort Foot Stalks, and are placed alternate on every Side the Branches. The Flowers are produced on long naked Foot Stalks, which extend 5 or 6 Inches beyond the End of the Branches; theſe are purple, and form a kind of round Bunch. The Empalement of the Flower is compoſed of ſhort chaffy Scales.

This grows naturally at *Campeachy*; it is tender, ſo muſt be treated as directed for the 4th Sort, with which it hath flowered, but hath not produced Seeds here.

The 16th Sort grows naturally at *Campeachy*; this riſes with a ſhrubby Stalk 10 or 12 Feet, ſending out many ſtrong ligneous Branches, covered with a dark coloured Bark, garniſhed with oblong, oval, blunt Leaves, ſawed on their Edges, and half embrace the Stalks with their Baſe. The Flowers are purple, growing in round Bunches at the End of the Branches, and are ſucceeded by flat Seeds crowned with Down.

This is alſo a tender Plant, and requires the ſame Treatment as the fourth Sort, with which it hath flowered, but doth not produce Seeds in *England.*

If the Seeds of theſe Plants are ſown in Autumn, ſoon after they are ripe, there is no Danger of their miſcarrying; but as theſe are moſt of them brought from abroad, they do not arrive here in good Time, ſo they rarely come up the firſt Year; therefore the Seeds ſhould be ſown in Pots, to preſerve them through the Winter, and the following Spring the Plants will come up.

The 17th Sort grows naturally in *Jamaica*; this riſes with a ſhrubby branching Stalk, about 4 or 5 Feet high. The lower Branches and Stalk are garniſhed with Spear-ſhaped Leaves, about 4 Inches long, and one broad in the Middle; they are ſawed on their Edges, and have ſhort Foot Stalks; the Leaves on the upper Branches are much narrower, and end in acute Points. The Flowers are produced in round Bunches at the End of the Branches, which are purple, and ſucceeded by downy Seeds like the other Species. This is tender, and requires the ſame Culture as the 4th Sort.

CONSERVATORY. *See* Green-houſe.

CONVAL LILY. *See* Convallaria.

COPAIBA, the Balſam of Capivi Tree.

The *Characters* are,

It hath a Flower conſiſting of 5 Leaves, which expands in form of a Roſe; it hath 5 ſhort Stamina, crowned by obtuſe Summits. The Pointal is fixed in the Centre of the Flower, which becomes a Pod, in which are contained one or two Seeds, ſurrounded with a Pulp of a yellow Colour.

We know but one Sort of this Tree, which is,

Copaiba *folio ſubrotundo, flore rubro.* The Balſam of Capivi, with a roundiſh Leaf, and a red Flower.

This Tree grows near a Village called *Ayapel*, in the Province of *Antiochi*, in the *Spaniſh Weſt-Indies*, about ten Days Journey from *Carthagena*. There are great Numbers of theſe Trees in the Woods about this Village, which grow to the Height of 50 or 60 Feet; ſome of theſe do not yield any Balſam, thoſe which do are diſtinguiſhed by a Ridge which runs along their Trunks; theſe Trees are wounded in their Center, and they place Calabaſh Shells or other Veſſels, to the wounded Part, to receive the Balſam, which will all flow out in a ſhort Time. One of theſe Trees will yield five or ſix Gallons of Balſam; but though theſe Trees thrive well after being tapped, yet they never afford any more Balſam.

As this Balſam is uſed in Medicine, it deſerves our Attention to procure the Trees, and cultivate them in ſome of the *Engliſh* Colonies of *America*; for as we are poſſeſſed of Lands in ſo many different Latitudes, they might cultivate moſt Kinds of Trees and Plants, from the different Parts of the World, which are uſeful in Medicine, Dying, or for any other Purpoſe of Life.

The Seeds of this Tree were brought from the Country of their Growth by Mr. *Robert Millar*, Surgeon, who ſowed a Part of them in *Jamaica*, which he informed me had ſucceeded very well; ſo that we may hope to have them propagated in great Plenty in a few Years, in ſome of the *Engliſh* Colonies, if the Slothfulneſs of the Inhabitants doth not ſuffer them to periſh, as they have the Cinnamon Tree, and ſome other uſeful Plants, which have been carried thither by curious Perſons.

There are not at preſent any of theſe Trees in *Europe*, that I can learn; for thoſe Seeds which Mr. *Millar* ſent over to *England*, were all deſtroyed by Inſects in their Paſſage, and not one ſucceeded in the ſeveral Places where they were ſown; but could freſh Seeds be procured, the Plants might be raiſed in *England*, and preſerved in the Bark Stoves very well; for the Country of their Growth is much more temperate than many others, from whence we have been furniſhed with a great Variety of Plants, which ſucceed very well in the Stoves, and ſome arrive to a great Degree of Perfection.

CORALLODENDRON. *See* Erythrina.

CORCHORUS. *Lin. Gen. Plant.* 596. *Tourn. Inſt.* 259. *Tab.* 135. Jews Mallow.

The *Characters* are,

The Empalement of the Flower is compoſed of five narrow Spear-ſhaped Leaves, which are erect. The Flower hath five oblong blunt Petals, which are no longer than the Empalement. It hath many hairy Stamina, which are ſhorter than the Petals, terminated by ſmall Summits. In the Center is ſituated an oblong furrowed Germen, ſupporting a ſhort thick Style, crowned by a bifid Stigma. The Germen afterward becomes a cylindrical Pod, having five Cells, which are filled with angular pointed Seeds.

The *Species* are,

1. Corchorus *capſulis oblongis, ventricoſis, foliorum infimis ſerraturis ſetaceis, reflexis. Lin.* Jews Mallow with oblong ſwelling Capſules, and briſtly Saws at the Baſe of the Leaves, which are reflexed. This is the *Corchorus ſive Melochia. J. B.* Common Jews Mallow.

2. Corchorus *foliis cordatis, ſerratis, capſulis oblongis, ventricoſis, ſulcatis.* Jews Mallow with Heart-ſhaped ſawed Leaves, and oblong, ſwelling, furrowed Capſules.

3. Corchorus *capſulis ſubrotundis, depreſſis, rugoſis. Flor. Zeyl.* 214. Jews Mallow with roundiſh depreſſed Capſules, which are rough.

4. Corchorus *flore flavo, fructu caryophylloide. Pluk.* Jews Mallow with a yellow Flower, and Fruit like a Clove.

5. Corchorus *foliis lanceolatis, ſerrato dentatis, capſulis linearibus, compreſſis, bivalvibus.* Jews Mallow with Spear-ſhaped Leaves, which are indented like the Teeth of a Saw, and narrow, compreſſed, bivalvular Pods.

6. Corchorus *foliis cordatis, ſerratis, capſulis linearibus, compreſſis, apicibus bifurcatis.* Jews Mallow with Heart-ſhaped ſawed Leaves, and narrow compreſſed Pods, whoſe Points have two Horns.

7. Corchorus *foliis lineari-lanceolatis, ſerratis, capſulis linearibus, compreſſis, bivalvibus.* Jews Mallow with narrow, Spear-ſhaped, ſawed Leaves, and narrow compreſſed Capſules, with two Valves.

8. Corchorus *affinis Chamædryos folio, flore ſtamineo, ſeminibus atris quadrangulis duplici ſerie diſpoſitis. Sloan. Cat.* 50. Jews Mallow with a Germander Leaf, a ſtamineous Flower, and four cornered black Seeds, diſpoſed in a double Order.

The 1ſt Species, *Rauwolf* ſays, is ſown in great Plenty about *Aleppo*, as a Pot Herb; the *Jews* boiling the Leaves to eat with their Meat; this he ſuppoſes to be the *Olus Judaicum* of *Avicenna*, and the *Corchorum* of *Pliny*. This Plant grows in the *Eaſt* and *Weſt-Indies*, from both which Places I have received the Seeds. In the *Eaſt-Indies* the Herb is uſed in the ſame Manner as in the *Levant*, as I have been informed; but I do not hear that it is uſed by the Inhabitants of *America*.

This is an annual Plant, which riſes about 2 Feet high, dividing into ſeveral Branches, garniſhed with Leaves of different Sizes and Forms, ſome are Spear-ſhaped, others oval, and ſome almoſt Heart-ſhaped; they are of a deep green, and ſlightly indented on their Edges, having near their Baſe 2 briſtly Segments, which are reflexed. They have very long ſlender Foot Stalks, eſpecially thoſe which grow on the lower Part of the Branches. The Flowers ſit cloſe on the oppoſite Side of the Branches to the Leaves, coming out ſingly; they are compoſed of 5, ſmall, yellow Petals, and a great Number of Stamina ſurrounding the oblong Germen, which is ſituated in the Center of the Flower, and afterward turns to a rough ſwelling Capſule, 2 Inches long, ending in a Point, opening in 4 Cells, filled with angular greeniſh Seeds. This Plant flowers in *July* and *Auguſt*, and the Seeds ripen in Autumn.

The 2d Sort grows naturally in ſeveral Iſlands of the *Weſt-Indies*, from whence the Seeds have been ſent me; this is alſo an annual Plant, which riſes with a ſtrong herbaceous Stalk, 2 Feet high, divided upward into 2 or 3 Branches, garniſhed with Heart-ſhaped Leaves, ſawed on their Edges, ſtanding on long Foot Stalks, and between theſe are ſeveral Leaves nearly of the ſame Form, ſitting cloſe to the Branches. The Flowers come out ſingly on the Side of the Branches, as the other, which are ſhaped like them, and ſucceeded by longer ſwelling Pods, which are rough, and have 4 longitudinal Furrows; theſe open into 4 Parts at the Top, and contain 4 Rows of angular Seeds. It flowers and ſeeds at the ſame Time as the former Sort.

The 3d Sort grows naturally in both *Indies*; I have received the Seeds of this from ſeveral Parts of *India* and *America*; this is alſo an annual Plant, which riſes with a ſlender herbaceous Stalk, about 3 Feet high, ſending out ſeveral weak Branches, garniſhed at each Joint by one Leaf of an oblong Heart Shape, ending in a long acute Point, and are ſawed on their Edges, ſtanding upon ſhort Foot Stalks, and have no ſmall Leaves between. The Flowers come out ſingly on the Side of the Branches, to which they ſit very cloſe; they are ſmaller than thoſe of the former Sorts, and are ſucceeded by ſhort roundiſh Seed Veſſels, which are rough, and flatted at the Top, having 6 Cells filled with ſmall angular Seeds. This flowers and ſeeds at the ſame Time.

The 4th Sort is alſo a Native of both *Indies*, from whence I have received the Seeds; this is an annual Plant, which riſes about 2 Feet high, dividing into ſmall Branches, garniſhed with oval Heart-ſhaped Leaves, crenated on their Edges. The Flowers are very ſmall, of a pale yellow, and are ſucceeded by ſwelling, rough, 4 cornered Seed Veſſels, about an Inch long, flatted at Top, where are 4 Horns, which are reflexed, ſo that theſe have ſome Reſemblance in Shape to a Clove. This flowers and ſeeds as the former Sorts.

The Seeds of the 5th Sort were ſent me from *Carthagena*, in *New Spain*, where the Plant grows naturally; this is an annual, and riſes about 3 Feet, ſending out ſeveral weak Side Branches, garniſhed with Leaves about 3 Inches long, and 1 broad in the Middle, leſſening gradually to both Ends, and indented on the Edges like the Teeth of a Saw; theſe ſit cloſe to the Branches. The Flowers come out ſingly, oppoſite to the Leaves; they are very ſmall, of a pale yellow; and are ſucceeded by Seed Veſſels near 2 Inches long, which are flat, and have 2 Cells filled with ſmall angular Seeds. This flowers and ripens Seeds as the former.

The Seeds of the 6th Sort were ſent me from *Jamaica*; this is an annual Plant, which riſes with a ſtrong herbaceous Stalk, between 3 and 4 Feet high, ſending out ſeveral Side Branches, which grow erect, garniſhed with Heart-ſhaped Leaves ſawed on their Edges, ſtanding on long ſlender Foot Stalks; between theſe grow many ſmaller Leaves nearly of the ſame Form, ſitting cloſe to the Branches. The Flowers come out from the Side of the Branches, on ſhort Foot Stalks; they are very ſmall, of a pale yellow, and are ſucceeded by flat Seed Veſſels near 3 Inches long, ending in 2 Horns; theſe open in 2 Cells filled with ſmall angular Seeds.

The Seeds of the 7th Sort were ſent me from *Barbadoes*, where the Plant grows naturally; I have had it riſe in the Earth which came over from thence in Tubs with growing Plants; this riſes about the ſame Height as the 6th, ſending out ſeveral weak Side Branches garniſhed with long narrow Leaves, rough, and ſawed on their Edges, ſitting cloſe to the Branches; between the larger Leaves come out ſeveral ſmall ones, placed irregularly on the Branches. The Flowers are ſmall, of a pale yellow, and come out on the Side of the Branches, oppoſite to the Leaves; theſe are ſucceeded by very narrow compreſſed Pods, near 2 Inches long, opening with 2 Valves, and filled with ſmall angular Seeds. It flowers and ſeeds at the ſame Time with the former.

The 8th Sort grows naturally in *Jamaica*; this riſes with a ſhrubby Stalk 4 Feet high, dividing into a great Number of ſmall Branches, cloſely garniſhed with ſmall, oval, ſawed Leaves ſitting cloſe to the Branches; between theſe are many very ſmall Leaves placed without Order. The Flowers are produced on the Side of the Branches on very ſhort Foot Stalks; theſe are ſmall, and the Petals ſoon fall off, ſo that it has been ſuppoſed to have no Petals. The Flowers are ſucceeded by compreſſed Seed Veſſels, 3 Inches long, rounded at their Points, and open with 2 Valves at the Top, containing a great Number of ſmall angular Seeds. This Plant hath a perennial Stalk, ſo may be preſerved through the Winter in a moderate Stove, and the 2d Year will flower in *June*, and produce ripe Seeds in Autumn; but when the Plants are brought forward, ſo as to flower the firſt Year, they ſeldom perfect their Seed, and theſe Plants cannot be ſo well preſerved as thoſe which are treated hardily in the Summer.

All theſe Sorts are too tender to thrive in *England* in the open Air, therefore their Seeds muſt be ſown on a hot Bed in Spring, and when the Plants are come up fit to remove, they ſhould be tranſplanted on a freſh hot Bed, to bring them forward, otherwiſe they will not ripen Seeds. After the Plants are rooted in the new hot Bed, they muſt have free Air every Day, in Proportion to the Warmth of the Seaſon, for they muſt not be drawn up weak; when the Plants have obtained Strength, they ſhould be tranſplanted each into a Pot, and plunged into a hot Bed, obſerving to ſhade them from the Sun till they have taken Root; then they muſt have a large Share of Air every Day, and ſhould be frequently refreſhed with Water, and in *June* they ſhould be gradually inured to the open Air, and Part of them may be ſhaken out of the Pots, and planted in a warm Border, where, if the Seaſon proves warm, they will flower and perfect Seeds; but as theſe will ſometimes fail, it will be proper to put one or two Plants of each Sort into Pots, which ſhould be placed in a Glaſs Caſe, where they may be ſcreened from bad Weather, and from theſe good Seeds may always be obtained. The laſt Sort may alſo be treated in the ſame Manner during the Summer, but in Autumn they muſt be removed into the Stove, and plunged in the Bark Bed, and theſe will flower early the 2d Year, and ripen Seeds.

CORDIA. *Plum. Nov. Gen.* 13. *Tab.* 14. *Sebeſtena. Dillen. Hort. Elth.* 225. Sebeſten.

The *Characters* are,

The Flower hath a permanent Empalement of one Leaf, indented in 3 Parts. It hath a Funnel-ſhaped Petal, whoſe Tube is the Length of the Empalement, and the Top is divided into 4, 5, or 6 Parts, which are obtuſe and erect. It hath 5 Stamina, terminated by long Summits, and in the Center a roundiſh pointed Germen, ſupporting a bifid Style, crowned by two obtuſe Stigmas. The Germen becomes a dry Berry, which is globular and pointed, faſtened to the Empalement, and incloſes a furrowed Nut with 2 Cells.

The *Species* are,

1. CORDIA *foliis oblongo-ovatis, repandis, ſcabris. Lin. Sp. Plant.* 190. *Cordia* with oblong, oval, rough Leaves, turning backward. This is the *Caryophyllus ſpurius inodorus, folio ſubrotundo, ſcabro, flore racemoſo, hexapetaloide, coccineo. Sloan. Cat.* 136. Wild unſavory Cloves with a roundiſh rough Leaf, and a ſcarlet Flower, commonly called *Lignum* Aloes.

2. CORDIA *foliis ſubovatis ſerrato dentatis. Hort. Cliff.* 63. *Cordia* with oval ſawed Leaves. This is the *Sebeſtena domeſtica ſive Myxa. Com. H. A.* cultivated Sebeſten.

3. CORDIA *foliis ovatis, integerrimis. Lin. Sp. Plant.* 191. *Cordia* with oval entire Leaves. This is the *Cordia Nucis juglandis folio flore purpureo. P. N.* 13. *Cordia* with a Walnut Tree Leaf and a purple Flower.

The 1ſt Sort grows naturally in ſeveral Iſlands in the *Weſt-Indies*; this riſes with ſeveral ſhrubby Stalks 8 or 9 Feet, garniſhed toward the Top with oblong, oval, rough Leaves, ſtanding alternate, on ſhort Foot Stalks; they are of a deep green on their upper Side. The Flowers terminate the Branches, growing in large Cluſters on branching Foot Stalks, ſome ſuſtaining one, others 2, and ſome have 3 Flowers, which are large, Funnel-ſhaped, having long Tubes, which ſpread open at the Top, where it is divided in 5 obtuſe Segments. They are of a beautiful Scarlet, ſo make a fine Appearance.

The 2d Sort is by moſt Botaniſts believed to be the *Myxa* of *Cæſalpinus*; which is the true Sebeſten of the Shops; the Fruit of which was formerly uſed in Medicine, but of late Years has been ſeldom brought to *England*; therefore is rarely ordered. This is called *Aſſyrian* Plumb, from the Country where it naturally grows; this riſes to the Height of our common Plumb-Trees, in its native Country. It is very rare in *Europe* at preſent: I ſaw one Plant of this in the Garden at *Amſterdam*, which is the only one I have yet ſeen.

The 3d Sort was diſcovered by Father *Plumier*, in ſome of the *French* Iſlands in *America*; and ſince was found in the Bay of *Campeachy*, by Mr. *Robert Millar*, who ſent the Seeds to *England*. This Sort grows to the Height of 18 or 20 Feet in the natural Places where it is found wild; it hath winged Leaves, which are large, entire, and ſmooth, but it hath not yet flowered in *England*, ſo I can give no farther Account of it.

Theſe Plants, being Natives of warm Countries, are too tender to live through the Winter in this Country, unleſs preſerved in a Stove. They are all propagated by Seeds, which muſt be procured from Countries of their natural Growth; for they never produce any in *England.* Theſe Seeds muſt be ſown in ſmall Pots, and plunged into a good hot Bed of Tanners Bark in Spring; and if the Seeds are freſh and good, the Plants will begin to appear in 5 or 6 Weeks after. Theſe muſt be brought forward in the hot Bed, by being treated as other tender exotick Plants; obſerving frequently to water them, as they are aquatick Plants; and in *July*, if the Plants have made much Advance, they ſhould be gradually hardened; otherwiſe they will grow ſo weak as not to be eaſily preſerved through the Winter. As theſe Plants obtain Strength, they will become more hardy; but during the two firſt Winters, it will be proper to plunge them into the Tan Bed in the Stove; but when they begin to have woody Stems, they may be placed on Shelves, in a dry Stove; where if they are kept in a moderate Degree of Heat, they may be preſerved very well (eſpecially the 1ſt Sort;) which is ſomewhat hardier than the others. This may alſo be placed abroad in a warm Situation, in the Beginning of *July*; where they may remain till the Middle of *September*, provided the Seaſon continues warm; otherwiſe it muſt be removed into the Stove ſooner.

Theſe Plants, eſpecially the 1ſt Sort, produce large Tufts of very fine ſcarlet Flowers, at the Extremity of the Branches, after the ſame Manner as the Oleander or Roſe-bay; but theſe Flowers are much larger, and of a much finer Colour.

A ſmall Piece of the Wood of this Tree, being put on a Pan of lighted Coals, will ſend forth a moſt agreeable Odour, which will perfume a whole Houſe.

COREOPSIS. *Lin. Gen. Pl.* 879. Tickſeed.

The *Characters* are,

The common Empalement of the Flower is double, the outer being compoſed of 8 *Leaves placed circularly; the inner is in every Part larger, membranaceous, and coloured. The Diſk of the Flower is compoſed of many hermaphrodite Florets which are tubular, and divided into* 5 *Parts at the Top, theſe have each* 5 *hairy Stamina, terminated by cylindrical Summits; in their Center is ſituated a compreſſed Germen with* 2 *Horns, ſupporting a ſlender Style, crowned by an acute bifid Stigma. The Germen becomes a ſingle orbicular Seed, convex on one Side; and hollow on the other; having a membranaceous Border, and* 2 *Horns on the Top. The Border or Rays of the Flower is compoſed of* 8 *female Florets, large, and Tongue-ſhaped, indented in* 5 *Parts; theſe have no Stamina, but a Germen like the other without any Style or Stigma, and are abortive.*

The *Species* are,

1. Coreopsis *foliis lanceolatis, ſerratis, alternis, petiolatis decurrentibus. Hort. Upſal.* 270. Tickſeed with Spear-ſhaped, ſawed Leaves, placed alternate, and are decurrent and have Foot Stalks. This is the *Chryſanthemum Virginianum, caule alato, ramoſius, flore minore. Pluk. Alm.* 100. *Virginia* Corn Marigold with a branching, winged Stalk, and a ſmaller Flower.

2. Coreopsis *foliis linearibus integerrimis. Gron. Virg.* 181. Tickſeed with very narrow entire Leaves.

3. Coreopsis *foliis lanceolatis, integerrimis. Lin. Sp. Pl.* 908. Tickſeed with Spear-ſhaped Leaves, which are entire. This is the *Bidens Succiſæ folio, radio amplo laciniato. Hort. Elth.* 55. *Bidens* with a Devils-bit Leaf and large Rays, which are cut on the Edges.

4. Coreopsis *foliis decompoſito pinnatis, linearibus. Lin. Sp. Pl.* Tickſeed with decompound, winged, narrow Leaves. This is the *Ceratocephalus delphinii foliis. Vaill. Ceratocephalus* with Lark-ſpur Leaves.

5. Coreopsis *foliis ſubternatis, integerrimis. Hort. Upſ.* Tickſeed with entire Leaves growing by Threes. This is the *Chryſanthemum Virginianum, folio acutiore, lævi, trifoliato, ſ. anagyridis folio. Mor. Virginia* Corn Marigold with a pointed, ſmooth, trifoliate Leaf.

6. Coreopsis *foliis lineari lanceolatis, acutè ſerratis, oppoſitis radio amplo integro.* Tickſeed with narrow, Spear-ſhaped Leaves, which are oppoſite and ſharply ſawed, and the Ray of the Flower large and entire.

The 1ſt Sort grows naturally in *North America* every where; this hath a perennial Root, and an annual Stalk, which decays to the Root every Winter; the Stalks are ſtrong, herbaceous, and riſe to the Height of 8 or 10 Feet, garniſhed with Spear-ſhaped Leaves ſawed on their Edges, from 3 to 4 Inches long, and one broad in the Middle, placed alternate on every Side the Stalks, having ſhort Foot Stalks, with a Border or Wing running from one to the other, the whole Length of the Stalk. The Flowers grow at the Top of the Stalks, forming a ſort of Corymbus, each Foot Stalk ſuſtaining 1, 2, or 3 yellow Flowers, ſhaped like Sun Flowers but much ſmaller. This flowers in *Auguſt* and *September*, but doth not produce Seeds in *England.* It is a very hardy Plant, and may be propagated in Plenty, by parting the Roots, the beſt Time for this is in Autumn when the Stalks begin to decay. It will thrive in almoſt every Soil and Situation.

The 2d Sort is a Plant of humbler Growth, ſeldom riſing above 2 Feet high: the Stalks grow erect, and the Leaves are very long, narrow, entire and rough: The Flowers are produced at the Extremity of the Shoots, of a fine yellow Colour, having a dark purple Middle; and theſe are of long Duration. The Plants commonly begin to flower the Middle of *July*, and continue till *October*; and if the Seaſon proves favourable, ſome Flowers will continue till *November*; which makes it merit a Place in every good Garden. The Seeds of this Sort have been frequently ſent to *England* from *Maryland*, where the Plants grow wild; but theſe ſeem to be biennial Plants with us, their Roots having as yet continued but two Years; nor do they perfect their Seeds in *England*; ſo that at preſent the Plants are very rare in the *Engliſh* Gardens; but as it is hardy, we may hope to reconcile it to our Climate, and find a Method to increaſe it.

The 3d Sort is an annual Plant; the Seeds of this were brought from *Carolina* by Mr. *Cateſby*, in 1726. This hath an upright Stalk, garniſhed with ſmooth narrow Spear-ſhaped Leaves, placed oppoſite which are entire; from the Wings of the Leaves come out the Foot Stalks of the Flowers, by Pairs oppoſite, and ſtand erect; the lower Part of theſe have one or two Pair of very narrow Leaves, but the upper is naked, and terminated by one large yellow Flower, whoſe Border or Rays are deeply cut into ſeveral Segments; theſe are ſucceeded by flat winged Seeds, which when ripe roll up, the naked Foot Stalks of theſe Flowers are more than a Foot long. This muſt be ſown upon a gentle hot Bed in Spring; and when the Plants are fit to tranſplant, they ſhould be each planted in a ſmall Pot, and plunged into a freſh hot Bed to bring them forward; in *June* they ſhould be inured by degrees to the open Air, and afterward ſome of them may be ſhaken out of the Pots, and planted in a warm Border; where, if the Seaſon is good, they will flower the Middle of *July*, and ripen their Seeds the Beginning of *September*.

The 4th Sort hath a perennial Root, which ſends up many ſtiff angular Stalks, which riſe upward of 3 Feet high, garniſhed at each Joint with decompound winged Leaves ſtanding oppoſite; theſe are very narrow and entire. The Branches come out by Pairs oppoſite as alſo the Foot Stalks of the Flowers, theſe are long, ſlender, and each terminated by a ſingle Flower of a bright yellow; the Rays or Border being oval and entire. The Diſk or Middle is of a dark purple Colour. Theſe appear in *July*, and continue till *September*, during which Time they make a fine Appearance. This grows naturally in *Maryland* and *Philadelphia*. It is propagated by parting the Roots as the firſt Sort, and delights in a light loamy Earth, and a ſunny Expoſure.

The 5th Sort hath a perennial Root and an annual Stalk. This grows naturally in many Parts of *North America*, but has been long cultivated in the *Engliſh* Gardens; the Stalks are ſtrong, round, and ſmooth, riſing 6 or 7 Feet high, and are garniſhed at each Joint with ſome trifoliate Leaves, which ſtand oppoſite. The Flowers are produced in Bunches at the Top of the Stalks, ſtanding upon long Foot Stalks; they are of a pale yellow, with a dark purple Diſk. It flowers in *July*, but ſeldom produces good Seeds in *England*. This Sort is propagated by parting the Roots as the firſt, but requires a better Soil and Poſition.

The 6th Sort grows naturally in *South Carolina*, from whence the Seeds were ſent me by the late Dr. *Dale*. This is an annual Plant, which riſes with upright Stalks to the Height of 4 Feet, garniſhed with narrow Spear-ſhaped Leaves ending in long Points, and deeply ſawed on their Edges, ſtanding by Pairs oppoſite at each Joint upon ſhort Foot Stalks; theſe Leaves are from 3 to 4 Inches long, and 3 Quarters of an Inch broad in the Middle, of a deep green on the upper Side, and pale on their under. At all the upper Joints of the Stalks, come out two long ſlender Foot Stalks, one on each Side, garniſhed with 2 or 3 Pair of ſmall Leaves, and terminated by one Flower, compoſed of 7 female half Florets which compoſe the Ray; theſe are oval and entire. The Diſk is compoſed of a great Number of hermaphrodite Florets, of a dark Colour, and the Summits of the Stamina of a bright yellow. Theſe hermaphrodite Florets are each ſucceeded by one flat bordered Seed, having two Horns or Teeth. This Sort flowers in *Auguſt*, and if the Autumn proves favourable, will ripen Seeds in *October*; but in cold Seaſons it will not perfect Seeds in *England*.

This Sort is propagated by Seeds, which ſhould be ſown on a warm Border in Autumn, and the Plants will come up the following Spring; for if the Seeds are ſown in the Spring, the Plants ſeldom riſe till the Year after. When fit to remove, they ſhould be carefully taken up and either planted where they are deſigned to remain, or into a Nurſery Bed, at 4 Inches diſtance to get Strength, obſerving to ſhade them from the Sun till they have taken freſh Root; after which, thoſe which are planted out for good, will require no other Treatment, but to keep them clean from Weeds, and as they advance in Height, ſhould be ſupported by Sticks, otherwiſe the ſtrong Winds in Autumn often break them; thoſe which were placed in a Nurſery Bed, when they have obtained proper Strength, ſhould be taken up and tranſplanted with Balls of Earth to their Roots, where they are deſigned to ſtand for flowering.

As theſe Plants produce Flowers till the Froſt puts a Stop to them, they merit a Place in every curious Garden, eſpecially thoſe which do not ramble and ſpread too much. The 1ſt is the leaſt deſerving, ſo is ſeldom preſerved, but in Botanick Gardens.

CORIANDRUM. *Lin. Gen. Plant.* 318. *Tourn. Inſt. R. H.* 316. *Tab.* 168. Coriander.

The *Characters* are,

It is a Plant with an umbellated Flower, the univerſal Umbel hath but few Rays, the particular Umbels have many. The firſt hath no Involucrum, but the latter hath a 3 leaved one; the proper Empalement is divided into 5 Parts, the Rays of the principal Umbel are difform; the hermaphrodite Flowers, which form the Diſk, have 5 equal Heart-ſhaped Petals which are inflexed, but thoſe of the Rays have five unequal Petals of the ſame Form; they have each 5 Stamina, terminated by roundiſh Summits. The Germen which is ſituated under the Flower, ſupports two Styles crowned by ſmall radiated Stigmas; the Germen afterward becomes a ſpherical Fruit, divided into two Parts, each having a hemiſpherical concave Seed.

The *Species* are,

1. CORIANDRUM *fructibus globoſis. Hort. Cliff.* 100. *Coriander* with globular Fruit. This is the *Coriandrum majus. C. B. P.* 158. Greater Coriander.

2. CORIANDRUM *fructibus didymis. Hort. Cliff.* 100. *Coriander* with twin Fruit. *Coriandrum minus teſticulatum. C. B. P.* 158. Smaller teſticulated Coriander.

The 1ſt of theſe Species is the moſt common Kind, which is cultivated in the *European* Gardens and Fields for the Seeds, which are uſed in Medicine. The 2d Sort is leſs common, and is ſeldom found but in Botanick Gardens. Theſe Plants grow naturally in the South of *France*, in *Spain* and *Italy*, but the firſt Sort has been long cultivated in the Gardens and Fields; though at preſent there is not near ſo much of it ſown in *England* as was ſome Years paſt.

Theſe Plants are propagated by ſowing their Seeds early in Spring, in an open Situation, in a Bed of good freſh Earth; and when the Plants come up, they ſhould be hoed out to about 4 Inches Diſtance every Way, clearing them from Weeds; by which Management theſe Plants will grow ſtrong, and produce a greater Quantity of good Seeds. The 1ſt Sort was formerly cultivated in the Gardens as a Sallad Herb. If the Seeds of this are ſown in Autumn, the Plants will riſe much ſtronger, and produce a greater Quantity of Seeds, than thoſe ſown in Spring.

CORIARIA. *Lin. Gen. Plant.* 458. *Niſſol. Act. Reg.* 1711. Myrtle leaved Sumach, *vulgò*.

The *Characters* are,

It is male and female in different Plants; the male Flowers have a 5 leaved Empalement; the Flower has 5 Leaves, *which are joined to the Empalement; theſe have* 10 *ſlender Stamina, terminated by oblong Summits; the female Flowers have the like Empalement, and the ſame Number of Petals; and in the Center are* 5 *Pointals, which turn to a Berry, incloſing* 5 *Kidney-ſhaped Seeds.*

The *Species* are,

1. Coriaria *foliis ovato oblongis. Hort. Upſal.* 299. Myrtle leaved Sumach, with oblong, oval Leaves. This is the *Coriaria vulgaris mas. Niſſol. Act.* 1711. Male Myrtle leaved Sumach.

2. Coriaria *vulgaris fœmina. Lin. Hort. Cliff.* Female Myrtle leaved Sumach.

The Sort with male Flowers is the moſt common in *England*, the other being very rarely ſeen in any of the Gardens. Theſe grow wild in great Plenty about *Montpelier* in *France*, where it is uſed for Tanning Leather; and, from this Uſe, has been titled by the Botaniſts, *Rhus coriariorum*; i. e. Tanners Sumach.

Theſe Shrubs ſeldom grow more than 3 or 4 Feet high; and as they creep at the Root, ſend forth many Stems, whereby they form a Thicket; ſo may be planted to fill up Vacancies in Wilderneſs Quarters; but they are improper for ſmall Gardens, where they will take up too much Room; and as there is no great Beauty in the Flowers, they are only admitted for Variety.

It is ſtrange that Mr. *Niſſol*, who lived on the Place where theſe grew in Plenty, who conſtituted this Genus, in the Memoirs of the Academy at *Paris*, has taken no Notice of their being male and female in different Plants.

It may be propagated plentifully from the Suckers, which are produced from the creeping Roots in great Abundance; theſe ſhould be taken off in *March*, and planted into a Nurſery, to form good Roots; where they may continue one or two Years, and then muſt be removed to the Places where they are to remain.

This Plant delights in a loamy Soil, which is not too ſtiff; and ſhould be placed where it may have Shelter from the North and Eaſt Winds; where it will endure the Cold of our ordinary Winters very well, and will flower better than if it is preſerved in Pots, and ſheltered in the Winter, as hath been by ſome practiſed.

CORINDUM. *See* Cardioſpermum.

CORIS. *Lin. Gen. Plant.* 216. *Tourn. Inſt.* 652. *Tab.* 423. We have no *Engliſh* Name for this Plant.

The *Characters* are,

The Empalement of the Flower is of one Leaf with a ſwelling Belly, but cloſed at the Top, where it is divided into 5 *Parts, which are crowned by* 5 *Spines; the Flower hath one ringent Petal, whoſe Tube is the Length of the Empalement, and ſpread open at the Top where it is divided into* 5 *oblong Segments, which are obtuſe and indented; it hath* 5 *briſtly Stamina, terminated by ſingle Summits. In the Center is ſituated a round Germen, ſupporting a ſlender declining Style, crowned by a thick Stigma; the Empalement afterward becomes a globular Capſule having* 5 *Valves, incloſing ſeveral ſmall oval Seeds.*

We have but one *Species* of this Plant, *viz.*

Coris. *Hort. Cliff.* 68. This is the *Coris cærulea maritima. C. B. P.* 280. Blue maritime *Coris.*

There are two other Varieties of this Plant, one with a red, and the other a white Flower, but theſe are only accidental Varieties ariſing from the ſame Seeds.

Theſe Plants grow wild about *Montpelier*, and in moſt Places in the South of *France*; they ſeldom grow above ſix Inches high, and ſpread near the Surface of the Ground like Heath; and in *June*, when they are full of Flowers, make a very pretty Appearance.

They may be propagated by ſowing their Seeds in Spring, on a Bed of freſh Earth; and when the Plants are about an Inch high, they ſhould be tranſplanted, ſome of them into Pots filled with freſh light Earth, that they may be ſheltered in Winter; and others into a warm Border, where they will endure the cold of our ordinary Winters very well; but in ſevere Froſt they are generally deſtroyed; for which Reaſon, it will be proper to put ſome Pots of each Sort under a common hot Bed Frame in Winter, where they may be covered in froſty Weather: But when it is mild, they ſhould have a great Share of free Air. Theſe Plants do not conſtantly produce ripe Seeds in *England*; therefore it will be proper to increaſe them from Slips and Cuttings; which will take Root, if planted in *Auguſt* on a very gentle hot Bed, and ſhaded from the Sun, and duly watered.

CORISPERMUM. *Lin. G. P. Jus.* Tickſeed.

The *Characters* are,

The Flower hath no Empalement, it hath 2 *compreſſed incurved Petals which ſtand oppoſite and are equal; it hath one,* 2, *or* 3 *Stamina, ſhorter than the Petals, terminated by ſingle Summits. It hath a compreſſed pointed Germen, ſupporting* 2 *hairy Styles crowned by acute Summits. The Germen becomes an oval Seed with an acute Border.*

The *Species* are,

1. Corispermum *floribus lateralibus. Hort. Upſal.* 2. Tickſeed with Flowers on the Side of the Stalks. This is the *Coriſpermum Hyſſopifolium. Jus. Act. R.* 1712. Hyſſop leaved Tickſeed.

2. Corispermum *ſpicis ſquarroſis. Hort. Upſal.* 3. Tickſeed with rough Spikes. This is the *Rhagroſtis foliis arundinaceis. Buxb. Rhagroſtis* with Reed-like Leaves.

Theſe Plants are preſerved only in Botanick Gardens for the ſake of Variety; having no Beauty.

The firſt Sort is an annual Plant, which, if ſuffered to ſcatter its Seeds, the Ground will be plentifully ſtocked with the Plants; which will require no other Care, but to prevent the Weeds from over growing them.

The 2d will not grow but in marſhy Places, where there is ſtanding Water; over the Surface of which this Plant will ſoon extend, when once it is eſtabliſhed.

As we had no *Engliſh* Name to this Genus, I have given it this of Tickſeed; which correſponds with the *Latin* Name.

CORK-TREE. *See* Quercus.

CORN-FLAG. *See* Gladiolus.

CORNICULATE-PLANTS [*Plantæ Corniculatæ*, are ſuch, as after each Flower produce many horned Seed Pods, called *Siliquæ.*]

CORN-MARIGOLD. *See* Chryſanthemum.

CORN-SALLAD. *See* Valerianella.

CORNUS *Lin. Gen. Plant.* 139. *Tourn. Inſt.* 641. *Tab.* 410. The Cornelian Cherry.

The *Characters* are,

It hath many Flowers which are included in one common four leaved Involucrum, which is coloured. The Flowers have each a ſmall Empalement, ſitting on the Germen which is indented in 4 *Parts. They have* 4 *plain Petals, which are ſmaller than the Leaves of the Involucrum, and* 4 *erect*

Stamina longer than the Petals, terminated by roundiſh Summits; the round Germen ſituated below the Empalement, ſupports a ſlender Style crowned by an obtuſe Stigma. The Germen becomes an oval, or roundiſh Berry incloſing a Nut with two Cells, having an oblong Kernel.

The *Species* are,

1. Cornus *arborea, cymis nudis. Lin. Sp. Plant.* 117. Dogwood Tree with naked Shoots. This is the *Cornus fœminea. C. B P.* 447. Female Dogwood, and the *Virga Sanguinea. Matth.* Bloody Twig.

2. Cornus *arborea, umbellis Involucrum æquantibus. Hort. Cliff.* 38. Tree Dogwood with Umbels equal in the Involucrum. This is the *Cornus hortenſis mas. C. B. P.* 447. Male Cornel or Cornelian Cherry Tree.

3. Cornus *mas Virginiana, floſculis in Corymbo digeſtis, à perianthio tetrapetalo albo radiatim cinctis Pluk. Alm.* 120. Male *Virginia* Dogwood, with Flowers collected into a Corymbus, ſurrounded by a four leaved white Involucrum diſpoſed in the Form of Rays.

4. Cornus *fœminea Virginiana anguſtiore folio.* Female *Virginia* Dogwood with a narrower Leaf.

5. Cornus *Americana ſylveſtris, domeſticæ ſimilis, baccâ cerulei coloris elegantiſſimâ, Amomum Novæ Angliæ quorundam. Pluk. Phyt. Tab.* 169. Wild *American* Dogwood, like the cultivated, with very beautiful blue Berries, by ſome the true *Amomum* of *New England.*

6. Cornus *fœminea candidiſſimis foliis Americana Pluk. Alm.* 120. Female Dogwood of *America* with very white Leaves, commonly called Swamp Dogwood.

7. Cornus *ſylveſtris fructu albo. Amman. Ruth.* Wild Dogwood with a white Fruit.

8. Cornus *pumila herbacea, chamæpericlymenum dicta. Hort. Elth.* 108. Low herbaceous Dogwood, called, Dwarf Honeyſuckle.

The firſt of theſe Trees is very common in the Hedges in divers Parts of *England*, and is ſeldom preſerved in Gardens. The Fruit of this Plant is often brought into the Markets, and ſold for Buckthorn Berries; from which it may be eaſily diſtinguiſhed, if the Berries are opened to obſerve how many Stones there are in each; which in this Fruit is but one, but in the Buckthorn four; and they may be eaſily diſtinguiſhed by rubbing the Juice of the Berries on Paper; that of the Buckthorn will ſtain the Paper green, whereas the Juice of this ſtains it purple. This Tree is called *Virga Sanguinea*, from the young Shoots being of a fine red Colour. There is a Variety of this Tree with variegated Leaves, preſerved in the Nurſeries, but is not much eſteemed.

The 2d Sort is very common in the *Engliſh* Gardens, being propagated for its Fruit; which is by many People preſerved to make Tarts. It is alſo uſed in Medicine as an Aſtringent and Cooler. There is alſo an officinal Preparation of this Fruit, called, *Rob de Cornis.* Of this there are two or three Varieties, which differ in the Colour of their Fruit; but that with the red Fruit is the moſt common in *England.*

As the Fruit of this Tree is not at preſent much eſteemed, the Nurſery Men about *London* propagate it as one of the Sorts commonly ſold as a flowering Shrub; and is by ſome People valued, for coming ſo early to flower; for if the Seaſon is mild, the Flowers will appear by the Beginning of *February*; and though there is no great Beauty in the Flowers, yet, as they are generally produced in Plenty, at a Seaſon when few other Flowers appear, a few Plants of them may be admitted for Variety. The Fruit is ſeldom ripe before *September.* The Tree will grow 18 or 20 Feet high, and make a large Head.

The 3d Sort is found in all the Northern Parts of *America*, as are alſo the 4th, 5th and 6th Sorts, being Natives of the Woods in *Virginia*, *New-England*, *Maryland*, and *Carolina.* Theſe are all of them very hardy, and thrive well in the open Air in *England*; ſo are cultivated by the Nurſery Men near *London*, to add to the Variety of their hardy Trees: Theſe grow to the ſame Height with our common female Dogberry, and make a much better Appearance. The Shoots of the 5th Sort are of a beautiful red Colour in Winter; and in Summer the Leaves being large, and whitiſh on their under Side, and the Bunches of white Flowers growing at the Extremity of every Branch, renders this Shrub valuable; in Autumn, when the large Bunches of blue Berries are ripe, they make a fine Appearance.

The 3d Sort is now very common in the Nurſeries, where it is known by the Name of *Virginia* Dogwood: This Sort is of a much humbler Growth than either of the former, ſeldom riſing above 7 or 8 Feet high. This is generally well garniſhed with Leaves, which are larger than either of the other Sorts; but is not ſo plentiful of Flowers, nor have I yet ſeen any of theſe Shrubs, which have produced Berries in *England*, though the Shrubs are as hardy as the other.

There is a Variety of this with a red Involucrum, or Cover, to the Flowers, which adds to the Beauty of the Plant; this was found wild in *Virginia* by Mr. *Baniſter*, and by Mr. *Cateſby.* This and the former Sort are great Ornaments to the Woods in *America*; firſt by their early flowering in Spring, before the green Leaves appear; and in Winter when the Berries are ripe, which hang upon the Shrubs till the Spring.

The 8th Sort grows upon *Cheviot* Hills in *Northumberland*, and alſo upon the *Alps*, and mountainous Places in the Northern Countries; but this is very difficult to preſerve in Gardens; the only Method is, to remove the Plants from the Places of their natural Growth, with good Balls of Earth to their Roots, and plant them in a moiſt ſhady Situation, where they are not annoyed by the Roots of other Plants. In ſuch a Situation they may be preſerved two or three Years; but it rarely happens that they will continue longer.

All the Sorts of Dogwood may be propagated by their Seeds, which, if ſown in Autumn ſoon after they are ripe, will moſt of them come up the following Spring; but if they are not ſown in Autumn, they will lie a Year in the Ground before the Plants will appear; and when the Year proves dry, they will ſometimes remain two Years in the Ground; therefore the Place ſhould not be diſturbed, where theſe Seeds are ſown, under two Years, if the Plants ſhould not come up ſooner. When the Plants come up, they ſhould be duly watered in dry Weather, and kept clean from Weeds; and the Autumn following, they may be removed, and planted in Beds in the Nurſery, where they may remain two Years; by which Time they will be fit to tranſplant, where they are to remain for good.

They are alſo propagated by Suckers, and laying down the

the Branches; moſt of the Sorts produce Plenty of Suckers, eſpecially when they are planted on a moiſt light Soil, which may be taken off from the old Plants in Autumn, and planted into a Nurſery for a Year or two, and then may be tranſplanted into the Places where they are to remain; but thoſe Plants which are propagated by Suckers, rarely have ſo good Roots as thoſe which are propagated by Layers, and being much more inclinable to ſhoot out Suckers, whereby they will fill the Ground round them with their Spawn; they are not near ſo valuable as the Plants raiſed from Layers.

CORNUTIA. *Plum. N. G.* 17. *Lin. Gen. Pl.* 684. *Agnanthus Vaill. Act. R.* 1722. [So called from *Cornutus*, a Phyſician of *Paris*, who publiſhed a Hiſtory of *Canada* Plants.]

The *Characters* are,

The Flower hath a ſmall permanent Empalement of one Leaf, tubular and indented in 5 *Parts at the Top. The Flower is of one Petal, having a cylindrical Tube, much longer than the Empalement, and divided into* 4 *Parts at the Top, the upper Segment is round, and erect, the* 2 *ſide ones ſpread apart, and the lower, is round and entire; it hath* 4 *Stamina,* 2 *of theſe are longer than the Tube, the other are ſhorter, they are terminated by inclining Summits. In the Center is ſituated the roundiſh Germen, ſupporting a long Style divided into* 2 *Parts, crowned by two thick Stigmas. The Germen becomes a globular Berry ſitting upon the Empalement, incloſing ſeveral Kidney-ſhaped Seeds.*

We have but one *Species* of this Plant, *viz.*

CORNUTIA. *Hort. Cliff.* 319. This is called by *Plumier*, *Cornutia flore pyramidato cæruleo, foliis incanis. Nov. Gen.* 32. *Cornutia* with a blue pyramidal Flower and hoary Leaves.

This Plant was firſt diſcovered by Father *Plumier* in *America*, who gave it the Name. It is found in Plenty in ſeveral of the Iſlands in the *Weſt-Indies* and at *Campeachy* and *La Vera Cruz*; from both which Places I received the Seeds. It grows to the Height of 10 or 12 Feet: The Branches grow ſtraggling, and the Leaves are placed by Pairs oppoſite. The Flowers are produced in Spikes at the End of the Branches, of a fine blue Colour; theſe uſually appear in Autumn, and ſometimes will remain in Beauty for two Months or more.

It is propagated by Seeds which ſhould be ſown early in Spring on a hot Bed; when the Plants come up, they ſhould be tranſplanted each into a Halfpenny Pot, filled with light freſh Earth, and plunged into a hot Bed of Tanners Bark, obſerving to ſhade them until they have taken Root; after which they ſhould have freſh Air let into the Bed, in Proportion to the Warmth of the Seaſon, and muſt be frequently watered (for it naturally grows on ſwampy Soils). When the Plants have filled theſe Pots with their Roots, they ſhould be ſhifted into others of a larger Size, and plunged into a hot Bed again, where they ſhould be continued till *October*; when they muſt be removed into the Bark Stove, and plunged into the Tan; otherwiſe it will be very difficult to preſerve it through the Winter. The Stove in which theſe Plants are placed, ſhould be kept to the temperate Heat marked on Mr. *Fowler*'s Thermometers, which will agree better with them than a hotter Stove. The third Year from Seed theſe Plants will flower, when they make a fine Appearance in the Stove; but they never perfect Seeds in *England*.

They may be alſo propagated by Cuttings, planted in Pots filled with freſh Earth, and plunged into a Bark Bed, obſerving to ſhade and water them; they muſt be afterwards treated as the ſeedling Plants.

CORONA IMPERIALIS. *See* Fritillaria.

CORONA SOLIS. *See* Helianthus.

CORONILLA. Jointed-podded *Colutea*.

The *Characters* are,

The Flower hath a ſhort permanent Empalement of one Leaf, which is compreſſed, bifid, and erect. It hath a Butterfly Flower, whoſe Standard is Heart-ſhaped, and reflexed on each Side. The Wings are oval, and join at the Top. The Keel is ſhorter than the Wings, and is pointed and compreſſed. It hath nine Stamina, which are united, and one ſtanding ſingle, which are broad at the Top, terminated by ſmall Summits. In the Center is ſituated an oblong taper Germen, ſupporting a briſtly riſing Style, crowned by an obtuſe Stigma. The Germen afterward becomes a taper jointed Pod, incloſing oblong Seeds.

The *Species* are,

1. CORONILLA *fruticoſa, foliolis emarginatis, extimo minore.* Shrubby *Coronilla*, whoſe leſſer Leaves are indented, and thoſe on the upper Part ſmaller. This is the *Coronilla maritima glauco folio. Tourn. Inſt.* 650. Maritime *Coronilla* with a Sea-green Leaf.

2. CORONILLA *fruticoſa foliolis undenis, extimo majore. Lin. Sp. Pl.* 743. Shrubby *Coronilla with* 11 ſmall Leaves, the outer being the largeſt. This is the *Coronilla argentea Cretica Tourn.* Silvery *Coronilla* of *Crete.*

3. CORONILLA *fruticoſa ſtipulis ſubrotundis. Lin. Sp. Plant.* 742. Shrubby *Coronilla* with roundiſh Stipulæ. This is the *Coronilla ſive Colutea minima. Lob. Icon.* 87. Smaller *Coronilla*, or *Colutea.*

4. CORONILLA *fruticoſa enneaphylla, foliolis emarginatis, ſtipulis majoribus ſubrotundis.* Shrubby nine leaved *Coronilla*, whoſe ſmall Leaves are indented, and having larger roundiſh Stipulæ. This is the *Coronilla ſiliquis & ſeminibus craſſioribus. Tourn. Inſt. R.* 650. *Coronilla* with thicker Pods and Seeds.

5. CORONILLA *foliolis plurimis, ovatis, caule ſuffruticoſo declinato, pedunculis longioribus. Coronilla* with many, oval Lobes, a declining Stalk, ſomewhat ſhrubby, and longer Foot Stalks to the Flowers. This is the *Coronilla minima. Tourn.* Smalleſt *Coronilla.*

6. CORONILLA *herbacea, leguminibus erectis, teretibus, toroſis, numeroſis, foliis glabris. Hort. Cliff.* 363. Herbaceous *Coronilla* with many, taper, erect Pods, and ſmooth Leaves. This the *Coronilla herbacea flore vario. Tourn.* Herbaceous *Coronilla* with a various coloured Flower.

7. CORONILLA *herbacea, leguminibus quinis, erectis, teretibus, articulatis. Prod. Leyd.* Herbaceous *Coronilla* with 5, taper, erect, jointed Pods. This is the *Coronilla Cretica herbacea, flore parvo purpuraſcente. Tourn.* Herbaceous *Coronilla* of Crete, with a ſmall purpliſh Flower.

8. CORONILLA *orientalis herbacea, flore magno luteo. Tourn. Cor.* 44. Eaſtern *Coronilla* with an herbaceous Stalk, and a large yellow Flower.

9. CORONILLA *ſcandens pentaphylla. Plum. Cat.* 19. Climbing five leaved *Coronilla.*

The 1ſt Sort is an humble Shrub, which ſeldom riſes higher than 2 Feet high, with a ſhrubby branching Stalk, garniſhed cloſely with winged Leaves, each being generally compoſed of 5 Pair of ſmall Leaves (or Lobes) terminated by an odd one; theſe are narrow at their Baſe, and broad at the Top, where they are roundiſh and indented; they are of a Sea-green Colour, and continue all the Year. The Flowers are produced on ſlender Foot Stalks from the Wings of the Leaves, on the upper Part of the Branches, ſeveral ſtanding together in a roundiſh Bunch; they are of the Butterfly, or Pea-bloom Kind, and of a bright yellow Colour, having a very ſtrong Odour, which to ſome Perſons is agreeable, but to others the contrary. This flowers in *April* and *May*, and the Seeds ripen in *Auguſt*.

This Plant is propagated by Seeds ſown in Spring, either upon a gentle hot Bed, or on a warm Border of light freſh Earth; and when the Plants are come up about 2 Inches high, they ſhould be tranſplanted either into Pots, or into a Bed of good rich Earth, at about 4 or 5 Inches Diſtance every Way, where they may remain until they have obtained Strength enough to plant out for good, which ſhould be either into Pots filled with good freſh Earth, or in a warm ſituated Border; in which if the Winter is not too ſevere, they will abide very well, provided they are in a dry Soil.

The 2d Sort is a Shrub of the ſame Size with the firſt, from which it differs in the Number of ſmall Leaves (or Lobes on each Mid-rib; theſe having 9 or 11, and are of a Silver Colour, but the Flowers and Pods are the ſame. It flowers at the ſame Time, and requires the ſame Treatment as the former.

The 3d Sort is a very low ſhrubby Plant, ſeldom riſing a Foot high, but the Stalks are ſhrubby; theſe are garniſhed with many winged Leaves, compoſed of many ſmall oval Lobes placed along the Mid-rib by Pairs, and ending in an odd one. The Flowers ſtand upon long ſlender Foot Stalks, which ariſe from the End of the Branches, they are yellow, and grow together in cloſe Bunches. This flowers in *June*, and the Seeds are ripe in *Auguſt*. This is a perennial Plant, which is propagated by Seeds; they may be ſown on a Bed of light Earth in *April*, and when fit to tranſplant, they ſhould be planted in a warm Border, obſerving to ſhade them from the Sun till they have taken freſh Root, and refreſh them with Water, when they require it. After they are well rooted, they will require no other Culture, but to keep them clean from Weeds; the next Year they will flower, and if they are on a dry Soil, and in a warm Situation, they will continue many Years.

The 4th Sort is nearly like the 1ſt, but hath fewer Pinnæ on each Mid-rib. The Flowers are larger, and have little Scent. The Pods and Seeds are much larger, and the Plants not quite ſo hardy. This flowers in *May* and *June*, but rarely perfects Seeds in *England*; it requires the ſame Treatment as the 1ſt, but in Winter ſhould be ſheltered, or hard Froſts will deſtroy them.

The 5th Sort is a low trailing Plant, with ſhrubby Stalks, which ſpread near the Ground, and are garniſhed with winged Leaves, compoſed of many Pair of ſmall Leaves placed along the Mid-rib, terminated by an odd one; theſe are oval, and of a bright green, the Flowers ſtand upon long Foot Stalks in cloſe Bunches, they are yellow, and without Scent. It flowers in *May*, and the Seeds ripen in Autumn. This is propagated by Seeds as the 3d, and requires the ſame Treatment.

The 6th Sort dies down every Winter, but riſes again the ſucceeding Spring; theſe riſe to the Height of 5 or 6 Feet, where they have Support, otherwiſe they trail on the Ground; they are garniſhed with winged Leaves, compoſed of ſeveral oblong ſmall Pinnæ, ſometimes placed by Pairs, and at other Times alternate, ending in a ſingle one; they are of a deep green. The Flowers come out on long Foot Stalks from the Wings of the Leaves, many growing together in round Bunches; they are variable from a deep to a light purple, mixed with white, and are ſucceeded by ſlender Pods from 2 to 3 Inches long, ſtanding erect. This Plant flowers in *June*, *July*, and *Auguſt*, and the Seeds ripen in Autumn. The Roots of this Plant creep very far under Ground, by which the Plant increaſes greatly; which, when permitted to remain unremoved for 2 or 3 Years, will ſpread and overbear whatever Plants grow near it, for which Reaſon the Roots ſhould be confined, and it ſhould be planted at a Diſtance from any other Plants; it thrives beſt in a warm ſunny Expoſure, in which the Flowers will alſo be much fairer, and in greater Quantities. This Plant was formerly cultivated to feed Cattle.

The 7th Sort hath an herbaceous Stalk, which riſes two Feet, garniſhed with winged Leaves, compoſed of 6 Pair of ſmall Leaves, placed along the Mid-rib, which is terminated by an odd one; theſe are larger than thoſe of the 6th Sort, and broader at the Top. The Foot Stalks of the Flowers come out from the Side of the Stalks; they are ſhorter than thoſe of the 6th, and ſuſtain ſmaller Heads of Flowers, which are ſucceeded by 5 taper jointed Pods, near 2 Inches long.

This is an annual Plant, which grows naturally in the *Archipelago*, from whence *Tournefort* ſent the Seeds to the Royal Garden at *Paris*. The Seeds ſhould be ſown on a Bed of light Earth in Spring, where the Plants are deſigned to remain, and when they come up, ſhould be thinned where they are too cloſe, and kept clean from Weeds, which is all the Culture they require. In *June* they flower, and the Seeds ripen in Autumn.

The 8th Sort was diſcovered by Dr. *Tournefort*, in the *Levant*, from whence he ſent the Seeds; this hath a perennial Root, and an annual Stalk, which riſes upward of 2 Feet high, ſtanding erect. The Leaves are compoſed of 5 or 6 Pair of ſmall oblong Leaves, ranged along the Mid-rib, which is terminated by an odd one. The Foot Stalks of the Flowers are ſtrong, and upward of 6 Inches in Length, ſupporting large Bunches of yellow Flowers, ſucceeded by ſhort thick Pods about an Inch long. This flowers in *June* and *July*, and in warm Seaſons the Seeds will ripen in Autumn; there is a Variety of this with large white Flowers.

This Sort is propagated by Seeds, which ſhould be ſown on a warm Border of light Earth in Spring, and when the Plants come up, they muſt be carefully cleaned from Weeds; when they are fit to remove, they ſhould be tranſplanted into a warm Border, where they are to remain, ſhading them from the Sun till they have taken freſh Root, after which they require no farther Care in Summer, but to keep them clean from Weeds; in Autumn, when the Stalks are decayed, if the Surface of the Ground is covered with ſome old Tan to keep out the Froſt, it will preſerve the Roots. The 2d Year the Plants will flower, and, if the ſame Care is taken in Winter, the Roots may be continued ſome Years.

The 9th Sort was diſcovered by Father *Plumier* in *America*. I received the Seeds from *Carthagena*; this hath a ſlender twining Stalk, which is hairy, and of a brown Colour, twiſting round any of the Shrubs which ſtand near it, whereby it riſes 8 or 10 Feet high, and is garniſhed with winged Leaves, for the moſt Part compoſed of 5 oval Lobes, one Inch long, and Half an Inch broad, of a deep green. The Flowers come out by Pairs at each Joint, ſtanding on very ſhort ſeparate Foot Stalks erect; they are large, and of a pale yellow; theſe are ſucceeded by taper jointed Pods, more than three Inches long, which are covered with ſhort, ſoft, white, hairy Down, and ſtand erect. This Plant is propagated by Seeds, which ſhould be ſown early in Spring on a moderate hot Bed; when the Plants come up, they ſhould be each tranſplanted into a Halfpenny Pot filled with freſh Earth, and plunged into a hot Bed of Tanners Bark, obſerving to ſhade them until they have taken Root; after which Time they ſhould have Air and Water in Proportion to the Warmth of the Seaſon, and when they have filled theſe Pots with their Roots, they ſhould be ſhifted into Pots of a larger Size, and plunged into the hot Bed again, where they muſt remain until Autumn, when they ſhould be removed into the Stove, and plunged in the Tan. Theſe Plants muſt be conſtantly kept in the Bark Stove, and placed among Plants which require a moderate Heat; where they will thrive and flower, and ſhould be ſupported by tall Sticks, round which they will twine as Hops do; for if they have not this Support, they will twiſt round other Plants and ſpoil them. Theſe are very proper to place againſt an Eſpalier on the back Part of the Stove, amongſt other climbing Plants, where they will make an agreeable Variety.

If they are carefully managed in Winter, they may be preſerved 2 or 3 Years, and will annually flower in *July*, and ſometimes produce ripe Seeds.

CORONOPUS. *See* Plantago.

CORTUSA. *Lin. Gen. Plant.* 181. [This Plant is ſo called from *Cortuſus*, a famous Botaniſt, who firſt brought it into Uſe.] Bears Ear Sanicle.

The *Characters* are,

The Flower hath a ſmall, ſpreading, permanent Empalement, indented at the Brim in 5 Parts; this hath one Wheel-ſhaped Petal, ſpreading open to the Bottom, and cut into 5 Parts at the Brim, having 5 prominent Tubercles at the Baſe. It hath 5 ſhort obtuſe Stamina, terminated by oblong erect Summits. In the Center is fixed an oval Germen, ſupporting a ſlender Style, crowned by a ſingle Stigma. The Germen becomes an oval, oblong, pointed Capſule, having two longitudinal Furrows, and one Cell, opening with two Valves, and filled with ſmall oblong Seeds.

The *Species* are,

8. CORTUSA *calycibus corollâ brevioribus. Lin. Sp. Plant.* 144. Bears Ear Sanicle, with an Empalement ſhorter than the Petal. This is the *Cortuſa Matthioli. Cluſ. Hiſt* 1. p. 307. Bears Ear Sanicle of *Matthiolus*.

2. CORTUSA *calycibus corollum excedentibus. Amœn. Acad.* 2. p. 3[illegible]. Bears Ear Sanicle with an Empalement longer than the Petal.

The fi[illegible] grows naturally on the *Alps*, the Mountains in *Auſtria*, and in *Siberia*. This Plant ſends out many oblong ſmooth Leaves a little indented on the Edges, and forms a Sort of Head, like the Auricula. The Foot Stalks of the Flowers come out in the Center of the Leaves; theſe riſe about 4 Inches high, and ſupport an Umbel of Flowers, each ſitting on a ſlender ſeparate ſhort Foot Stalk; they are of a Fleſh Colour, and ſpread open like the Auricula. It flowers in *April*, but doth not produce Seeds in the Gardens, for this Plant is with great Difficulty kept in a Garden. The only Method by which I could ever preſerve them, has been by planting them in Pots, and placing them in a ſhady Situation, where they were duly watered in dry Weather; in this Place they conſtantly remained both Summer and Winter, for the Cold will not deſtroy them; the Earth for this Plant ſhould be light, and not too rich; for Dung is very injurious to it. As this very rarely produces Seeds in *England*, the only Method to propagate it is, by parting the Roots as is practiſed for Auriculas; the beſt Time for this is about *Michaelmas*, ſoon after which the Leaves decay.

The 2d Sort is very like the firſt, but the Flowers are much leſs; this grows naturally in *Siberia*, but is with great Difficulty kept in a Garden.

CORYLUS. *Lin. Gen. Plant.* 953. *Tourn. Inſt. R. H.* 581. The Hazel or Nut Tree.

The *Characters* are,

It hath male and female Flowers growing at remote Diſtances on the ſame Tree. The male Flowers are produced in long ſcaly Katkins, each Scale including a ſingle Flower, having no Petals, but 8 ſhort Stamina faſtened to the Side of the Scale, and terminated by oblong erect Summits. The female Flowers are included in the future Bud, ſitting cloſe to the Branches; theſe have a thick two leaved Perianthium, torn on the Border, ſitting under the Flower when it is ſmall, but afterward is enlarged to the Size of the Fruit; it hath no Petal but a ſmall round Germen occupies the Center, ſupporting two briſtly Styles, which are longer than the Empalement, and are coloured, and crowned by two ſingle Stigmas. The Germen becomes an oval Nut, ſhaved at the Baſe, and compreſſed at the Top, ending in a Point.

The *Species* are,

1. CORYLUS *ſtipulis ovatis obtuſis. Hort. Cliff.* 448. Hazel Nut with oval blunt Stipulæ. This is the *Corylus Sylveſtris. C. B. P.* 418. Wild Hazel Nut.

2. CORYLUS *ſtipulis oblongis, obtuſis, ramis erectioribus.* Hazel with oblong blunt Stipulæ, and the Branches growing more erect. This is the *Corylus ſativa fructu oblongo. C. B. P.* 418. The Filbert.

3. CORYLUS *ſtipulis linearibus acutis. Hort. Cliff.* 448. Hazel with narrow acute Stipulæ. This is the *Corylus Byzantina. H. L.* 191. *Byzantine* Nut.

The firſt of theſe Trees is common in many Woods in *England*, from whence the Fruit is gathered in Plenty, and brought to the *London* Markets by the Country People. This Tree is ſeldom planted in Gardens (except by Perſons curious in Collections of Trees and Shrubs); it delights to grow on a moiſt ſtrong Soil, and may be plentifully increaſed by Suckers from the old Plants, or by laying down their Branches, which in one Year's Time, will take ſufficient Root for tranſplanting, and theſe will be much handſomer and better rooted

Plants than Suckers, and will greatly outgrow them, eſpecially while young.

There is a Variety of this Fruit growing in great Cluſters at the End of the Branches, which is diſtinguiſhed by the Title of Cluſter Nut, but as this is ſuppoſed to be only an accidental Variety from the Seed of the other, I have not diſtinguiſhed it; this may be continued by Layers.

The 2d Sort is by many ſuppoſed to be only a ſeminal Variety from the firſt, improved by Culture, but this is very doubtful, for I have ſeveral Times propagated both from the Nuts, but never found them vary from one to the other, though they have altered in the Size and Colour of their Fruit, from the Sorts which were ſown; but as the Shrubs of this grow more erect than thoſe of the other, and the Stipulæ are different in their Shape, ſo I have enumerated it as a diſtinct Sort; of this there are the red and white Filberts, both which are ſo well known, as to need no Deſcription.

The 3d Sort grows naturally near *Conſtantinople*; the Nuts are large, roundiſh, and in Shape like thoſe of the common Hazel, but are more than twice their Size. The Cups in which their Nuts grow, are very large, ſo as almoſt to cover the Nut, and is deeply cut at the Brim. This Sort is not common in *England*, but I take thoſe large Nuts which are annually imported from *Barcelona*, to be of the ſame Kind, the Nuts being ſo like as not to be diſtinguiſhed, when out of their Cups; as thoſe of the *Spaniſh* Sort, come over naked, ſo I cannot with Certainty ſay how they eſſentially differ.

All theſe Sorts may be propagated by ſowing their Nuts in *February*; which, in order to preſerve them good, ſhould be kept in Sand in a moiſt Cellar, where the Vermin cannot come at them to deſtroy them; nor ſhould the external Air be excluded from them, which would occaſion their growing mouldy.

The Manner of ſowing the Seeds being well known to every one, I need not here mention it, eſpecially ſince it is not the ſureſt Way to obtain the Sorts deſired; for they ſeldom prove ſo good as the Nuts which were ſown, or at leaſt not one in four of them; the Method of propagating them by Layers being the ſureſt and moſt expeditious, is what I would recommend to every one who would cultivate theſe Trees for the Sake of their Fruits.

CORYMBUS [Κόρυμβος, *Gr.*] ſignifies among Botaniſts, round Cluſters of Berries, as thoſe of Ivy.

Jungius uſes it to ſignify the Extremity of a Stalk, ſo ſubdivided and laden with Flowers, or Fruits, as to compoſe a ſpherical Figure.

It is alſo by modern Botaniſts uſed to ſignify a compound diſcous Flower, which does not fly away in Down, as the Chryſanthemum, Daiſy, Chryſocome, &c. For theſe Kind of Flowers, being ſpread into Breadth, do, after a Sort, reſemble an Umbrella, or Bunch of Ivy Berries.

COSTUS. *Lin. Gen. Plant.* 3.

The *Characters* are,

It hath a ſimple Spadix and Spathæ, with a ſmall Empalement, divided into 3 Parts, ſitting on the Germen. The Flower hath 3 concave Petals, which are erect and equal, with a large oblong Nectarium of one Leaf, having two Lips, the lower being broad, and as long as the Petal. The upper is ſhorter, and Spear-ſhaped, changing to a Stamen; this is faſtened to the upper Lip of the Nectarium, to which adheres a bipartite Summit. The Germen is ſituated within the Receptacle of the Flower, which is roundiſh, ſupporting a ſlender Style, crowned by a compreſſed indented Stigma. The Germen afterward becomes a roundiſh Capſule with 3 Cells, containing ſeveral triangular Seeds.

We have but one Sort of this Plant, *viz.*

COSTUS. *Hort. Cliff.* 2. This is the *Coſtus Arabicus. C. B. P.* 36. *Arabian Coſtus.*

This hath a fleſhy jointed Root, like that of Ginger, which propagates under the Surface as that doth; from which ariſe many round taper herbaceous Stalks, garniſhed with oblong ſmooth Leaves, embracing the Stalks like thoſe of Reed; theſe Stalks riſe near 2 Feet high, and out of the Center, the Club, or Head of Flowers is produced, which is near 2 Inches long, the Thickneſs of a Man's Finger, and blunt at the Top, compoſed of ſeveral leafy Scales, out of which the Flowers come; theſe have but one thin white Petal, which ſeldom continues longer than one Day before it fades, and is never ſucceeded by Seeds in this Country. The Time of its flowering is very uncertain, for ſometimes it flowers late in the Winter, and at other Times it has flowered in Summer, ſo is not conſtant to any Seaſon in *England*. It grows naturally in moſt Parts of *India*.

This is propagated by parting the Roots, the beſt Time for this is in Spring, before the Roots put out new Stalks. The Roots muſt not be divided too ſmall, becauſe that will prevent their flowering. They ſhould be planted in Pots, filled with light Kitchen Garden Earth, and plunged into the Tan Bed in the Stove, where they ſhould conſtantly remain, and may be treated as the Ginger, for which, ſee the Article *Amomum*.

The Roots of this Plant were formerly imported from *India*, and were much uſed in Medicine, but of late Years they have not been regarded, the Roots of Ginger being generally ſubſtituted for theſe.

COTINUS. *See* Rhus.

COTONEA MALUS. *See* Cydonia.

COTONEASTER. *See* Meſpilus.

COTULA. *Lin. Gen. Plant.* 868. *Ananthocyclus. Vaill. Act. Reg. Scien.* 1719. Mayweed.

The *Characters* are,

It hath a Flower compoſed of hermaphrodite Florets in the Diſk, and female half Florets, which form the Rays; theſe are included in one common convex Empalement, divided into ſeveral oval Parts. The hermaphrodite Florets are tubular, and cut into 4 unequal Parts at the Top; theſe have 4 ſmall Stamina, terminated by turbular Summits, and have 2 obtuſe Stigmas; theſe have one, ſmall, oval, angular Seed to each. The female half Florets have an oval compreſſed Germen, ſupporting a ſlender Style, crowned by 2 Stigmas, but have no Stamina; theſe are ſucceeded by ſingle Heart-ſhaped Seeds, plain on one Side, and convex on the other, with an obtuſe Border.

The *Species* are,

1. COTULA *foliis pinnato-multifidis, corollis radio deſtitutis. Hort. Cliff.* 417. Mayweed with many pointed, winged Leaves, and no Rays to the Flower. This is the *Chamæmelum luteum capite aphyllo. C. B. P.* 135. Yellow Chamomile with Heads having no Rays.

2. COTULA *receptaculis ſubtus inflatis, turbinatis. Hort. Cliff.* 417. Mayweed whoſe Receptacles are ſwollen and

turbinated beneath. This is the *Cotula Africana calice eleganter cæſio. Tourn. Inſt. R.* 495. *African* Mayweed with an elegant bluiſh Empalement.

3. Cotula *foliis lanceolato-linearibus, amplexicaulibus pinnatifidis. Hort. Cliff.* 417. Mayweed with narrow Spear-ſhaped Leaves embracing the Stalk, and having many Points. This is the *Chryſanthemum exoticum minus, capite aphyllo, Chamæmeli nudi facie. Breyn. Cent.* 156. Smaller foreign Corn Marigold without Rays, having the Appearance of naked Chamomile.

The 1ſt Sort grows naturally in *Spain*, *Italy*, and the *Archipelago*; this is an annual Plant, which riſes with a branching Stalk, half a Foot high, garniſhed with Leaves finely divided like thoſe of Chamomile. The Flowers are produced ſingly at the End of the Branches, and are very like thoſe of the naked Chamomile, but the Heads riſe higher in the Middle like a Pyramid. This flowers in *May* and *June*, and the Seeds ripen in *Auguſt*. If the Seeds of this Sort are permitted to ſcatter, the Plants will come up in the Spring, and require no other Care, but to keep them clean from Weeds, and thin the Plants where they are too cloſe.

The 2d Sort grows naturally at the *Cape of Good Hope*, from whence I received the Seeds; this is an annual Plant, ſending out many branching Stalks which ſpread on the Ground, and are garniſhed with very fine divided Leaves, covered with a Lanugo, or Cotton. The Flowers are produced ſingly upon long Foot Stalks, ariſing from the Side of the Branches; theſe have a narrow Border of white Rays, with a pale yellow Diſk. It flowers in *June* and *July*, and the Seeds ripen in Autumn. This Sort muſt be raiſed on a moderate hot Bed in Spring, and when the Plants have obtained Strength, they may be tranſplanted into a warm Border, where they will ripen their Seeds very well.

The 3d Sort is an annual Plant, which ſends out trailing Stalks about 6 Inches long, garniſhed with ſucculent Leaves, in Shape like thoſe of Buckſhorn Plaintain. The Flowers grow from the Diviſions of the Stalks, on ſhort weak Foot Stalks being deſtitute of Rays; they are of a Sulphur Colour, and appear about the ſame Time with the former. If the Seeds are ſown on a warm Border, where the Plants are to remain, they will require no other Culture, but to keep them clean from Weeds. The Flowers of the two laſt Sorts ſtand erect, when they firſt appear, but ſo ſoon as the Florets are impregnated, and their Colour changes, the Foot Stalks become very flaccid toward the Top, and the Flowers hang downward, but when the Seeds are ripe, the Foot Stalks become ſtiff, and the Heads ſtand erect for the Wind to diſperſe the Seeds.

COTYLEDON. *Lin. Gen. Plant.* 512. *Tourn. Inſt. R. H.* 90. *Tab.* 19. Navelwort.

The *Characters* are,

The Flower hath a ſmall Empalement of one Leaf, divided into 5 *Parts at the Top. It hath one Petal, and is Funnel-ſhaped, cut into* 5 *Parts at the Brim which turns backward. It hath* 5 *Germina, which have each a ſquamous, concave Nectarium at the Baſe, and each ſuſtains a Style, crowned by a ſingle Stamen; theſe are attended by* 10 *erect Stamina, terminated by erect Summits having* 4 *Furrows; the Germina become oblong, ſwelling Capſules, opening longitudinally with one Valve, and filled with ſmall Seeds.*

The *Species* are.

1. Cotyledon *foliis cuculatis, ſerrato dentatis, alternis, caule ramoſo, floribus erectis. Lin. Sp. Plant.* 429. Navelwort with hooded Leaves, ſharply indented, and growing alternate, and a branching Stalk, with erect Flowers. This is the *Cotyledon major. C. B P.* 285. Greater Navelwort, and the *Umbilicus Veneris. Cluſ. H.*

2. Cotyledon *foliis oblongis ſpinoſo mucronatis, caule ſpicato. Lin. Sp. Plant.* 429. Navelwort with oblong, pointed Leaves, ending with a Spine, and a ſpiked Stalk.

3. Cotyledon *foliis ovalibus, crenatis, caule ſpicato Lin. Sp. Plant.* 429. Navelwort with oval, crenated Leaves, and a ſpiked Stalk. This is the *Cotyledon Cretica, folio oblongo, fimbriato. Hort. Elth.* 113. *Tab.* 95. Navelwort of *Crete* with an oblong, fringed Leaf.

4. Cotyledon *foliis ſemiglobofis. Hort. Cliff.* 176. Navelwort with ſemiglobular Leaves. This is the *Cotyledon Capenſis, folio ſemiglobato. Hort. Elth.* 112. *Tab.* 94. Navelwort of the *Cape*, with a ſemiglobular Leaf.

5. Cotyledon *foliis ſubrotundis, planis integerrimis. Hort. Cliff.* 276. Navelwort with roundiſh, plain, entire Leaves. This is the *Sedum Africanum fruteſcens, incanum, orbiculatis foliis. H. L.* 349. Shrubby *African* hairy Houſeleek, with roundiſh Leaves.

6. Cotyledon *caule ramoſſiſſimo, foliis rotundis, planis, marginibus purpureis.* Navelwort with a branching Stalk, round, plain, hairy Leaves, with purple Edges.

7. Cotyledon *major, arboreſcens Afra, foliis orbiculatis, glaucus, limbo purpureo, & maculis viridibus ornatis. Boerh. Ind. alt.* 1. 287. Greater *African* Tree Navelwort with round, gray Leaves, having purple Edges, and garniſhed with deep green Spots.

8. Cotyledon *caule ramoſo ſucculento, foliis ovatis, planis, acuminatis oppoſitis ſemiamplexicaulibus.* Navelwort with a ſucculent branching Stalk, and oval, plain, pointed Leaves, half embracing the Stalk.

9. Cotyledon *Africana fruteſcens, folio longo & anguſto, flore flaveſcente. Com. Rar. Plant.* 23. *Tab.* 23. Shrubby *African* Navelwort, with long, narrow, Leaves, and a yellowiſh Flower.

10. Cotyledon *foliis laciniatis, floribus quadrifidis. Hort. Cliff.* 175. Navelwort with cut Leaves, and four pointed Flowers. *Cotyledon Afra, folio craſſo lato laciniato, floſculo aureo. Boerh. Ind. African* Navelwort with a broad, thick, cut Leaf, and a golden Flower.

The firſt Sort, which is that uſed in Medicine, grows on old Walls in divers Parts of *England*, particularly in *Shropſhire* and *Somerſetſhire*, where it greatly abounds on old Buildings, and on rocky Places; but is not often found wild near *London*, nor often cultivated in Gardens; this hath many round ſucculent Leaves, whoſe Foot Stalks are placed almoſt in the Center, ſo as to reſemble a Target. Theſe are alternately ſawed on their Edges, which frequently turn inward; the upper Surface of the Leaves are hollowed in the Middle, where the Foot Stalks are joined on the lower Side, ſo as to reſemble a Navel; from whence the Plant was titled Navelwort. From between the Leaves ariſe the Foot Stalks of the Flowers, which in ſome Places grow near 3 Feet high, and in others not more than 6 Inches, their lower Part being garniſhed with Leaves, and their upper Part with Flowers, which ſtand cloſe to the Side of the Branches, and grow erect; they are of a whitiſh yellow Colour and appear in *June*. It requires a dry rubbiſhy Soil, and a ſhady Poſition: This is a biennial Plant, ſo after it has perfected Seed, the Plant decays; but if the Seeds are ſcattered on Walls, and old Buildings, as ſoon as it is ripe, or if the Seeds are permitted to fall upon ſuch Places, the Plants will come up, and thrive much better than when they are ſown in the Ground; and when once the Plants are eſtabliſhed upon an old Wall or Building, they will ſow their Seeds, and maintain their Place, better than when cultivated with more Care.

The 2d Sort grows naturally in *Siberia*, from whence it was brought to the Imperial Garden at *Peterſburgh*. This was ſent me by Dr. *Amman*. It is a low Plant, in Shape like the Houſleek, but the Leaves are longer and terminate in ſoft Spines. The Flower Stalks riſe about 4 Inches high, and ſupport 4 or 5 whitiſh Flowers, cut at the Brim into 5 Parts. Theſe appear in *April*, and ſometimes ſucceeded by Seeds in *England*. This Sort requires a very ſhady Situation; for if expoſed to the Sun in Summer, the Plants will ſoon decay. It is propagated by Offſets like the Houſleek, and requires a pretty ſtrong Soil.

The 3d Sort grows naturally in the *Levant*, this hath a fibrous Root, from which is produced a ſingle upright ſucculent Stalk, garniſhed with oblong, thick ſucculent Leaves placed alternate, which are ſawed on their Edges. The upper Part of the Stalk is garniſhed with purpliſh Flowers, growing in a looſe Spike, 2 or 3 being joined on the ſame Foot Stalk which is very ſhort. The Flowers appear in *June*, and the Seeds ripen in Autumn. It is a biennial Plant, which decays ſoon after the Seeds are ripe. If this Sort is ſown upon a Wall, it will thrive better than in the Ground, and be leſs liable to ſuffer by Froſt, ſo that where the Seeds ſcatter themſelves in ſuch Situations, the Plants thrive better than when they are cultivated.

The 4th Sort grows naturally at the *Cape of Good Hope*. This hath a thick ſucculent Stalk, which rarely riſes above a Span high, dividing into many Branches; theſe are garniſhed with ſhort thick ſucculent Leaves, very convex on their under Side, but plain on their upper, not more than half an Inch long, and a Quarter broad, of a grayiſh Colour ſpotted over with ſmall green Spots, and ſit cloſe to the Branches. The Foot Stalks of the Flower riſe from the Top of the Branches, and are 6 Inches long, and ſupport 5 or 6 Flowers, which come out alternate from the Side, ſitting very cloſe to the Stalks, they are tubular, and cut into 5 Parts at the Top, theſe are greeniſh with purple Tips. It flowers in *June* and *July*, but never produces Seeds in *England*.

The 5th Sort grows naturally on dry gravelly Spots, at the *Cape of Good Hope*. It hath a thick ſucculent Stalk, which by Age becomes ligneous, and riſes 3 or 4 Feet high, ſending out crooked Branches, which grow irregular; theſe are garniſhed with thick fleſhy ſucculent Leaves about 2 Inches long and near as wide toward the Top, they are narrow at the Baſe, and rounded at the Top, of a Sea green Colour with a purple Edge, which is frequently irregularly indented. The Flowers grow on thick ſucculent Foot Stalks, which ariſe from the End of the Branches, and are near a Foot long, naked, and ſupporting 8 or 10 Flowers, growing in an irregular Umbel at the Top; theſe are of a pale yellow Colour, having long Tubes which hang downward, and cut into 5 Parts at the Brim, which turn backward, the Stamina and Style being longer than the Tube of the Flower, hanging downward. This Sort flowers in *July*, *Auguſt*, and *September*, but doth not ripen Seeds in *England*.

The 6th Sort is alſo a Native of the *Cape of Good Hope*, this hath a ſhort, thick, ſucculent Stalk, which rarely riſes more than a Foot high, branching out on every Side, ſo as to ſpread over the Pots in which they are planted. Theſe become woody by Age, and are cloſely garniſhed with thick round Leaves of a grayiſh Colour with purple Borders. They are plain on their upper Side, but convex on their under, and very fleſhy, of an herbaceous Colour within, and full of Moiſture. This Sort hath not flowered in *England*, ſo far as I can learn; for I have kept Plants of it which were twenty Years old, but never attempted to flower. It is undoubtly a different Sort from the former, although they have been ſuppoſed to be the ſame by ſome Writers.

The 7th Sort is ſomewhat like the 6th; but the Stalks riſe higher, the Leaves are much larger, and ſhaped more like thoſe of the 5th, but are ſpotted on their upper Side with great Numbers of dark green Spots; they have a deep Border of purple on their Edges, and ſit cloſe to the Branches. This hath not yet flowered in *England*. It is alſo a Native of *Æthiopia*.

The 8th Sort hath been of late Years introduced into the Gardens in *Holland*, from the *Cape of Good Hope*, where it grows naturally. And was ſent me by Dr. *Adrian Van Royen*. This riſes with a ſucculent Stalk near 3 Feet high, which divides into many Branches, growing erect; theſe are garniſhed with oval, ſucculent Leaves placed by Pairs oppoſite; they are of a lively green, and end in Points, and half embrace the Stalks with their Baſe. This Sort hath not as yet produced any Flowers in *England*.

The 9th Sort grows on rocky Places at the *Cape of Good Hope*, from whence it was firſt brought to the Gardens in *Holland*, and hath ſince been ſpread into moſt Parts of *Europe*. This hath a ſhort, greeniſh ſucculent Stalk, which ſeldom riſes more than a Span high, dividing into ſeveral irregular Branches, garniſhed with thick, ſucculent Leaves, 4 Inches long, half an Inch broad, and as much in Thickneſs, having a broad concave Furrow on their upper Side, running almoſt their whole Length, and are convex on their under Side, of a bright green with a purple Tip. The Foot Stalks of the Flowers are produced at the End of the Branches, and riſe near a Foot high, having here and there an oblong pointed Leaf, growing on their Side. The Flowers ſtand on ſhort Foot Stalks, which branch out from the principal Stem; theſe are yellow, having long Tubes, cut at the Top into 5 Parts, and reflexed backward. The Flowers of this Sort hang downward, and the Stamina are longer than the Tube of the Flower; the reflexed Parts of the Petal are tipped with purple. Dr. *Linnæus* has ſuppoſed this to be the ſame with the 5th Sort; but whoever has ſeen both Plants, cannot doubt of their being diſtinct Species.

The 10th Sort grows naturally in the warm Parts of *Africa*, ſo is much more tender than either of the other Sorts; this riſes with an upright Stem about a Foot high, which is jointed and ſucculent, garniſhed with broad Leaves, deeply cut on their Edges; they are of a grayiſh Colour, placed oppoſite and almoſt embrace the Stalks with their Baſe. The Foot Stalks of the Flowers ariſe from the End of the Branches which are about ſix Inches long, ſuſtaining 7 or 8 ſmall Flowers of a deep yellow Colour, divided into 4 Parts almoſt to the Bottom. The Stamina of theſe Flowers, are not longer than the ſhort Tube. This flowers at different Seaſons, but never produces any Seeds in *England*.

This Sort requires a warm Stove to preſerve it through the Winter in *England*, nor ſhould it be expoſed abroad in Summer; for if it receives Wet, the Stalks are very ſubject to rot, ſo that it ſhould conſtantly remain either in the Stove, or in Summer placed in an airy Glaſs Caſe, with other tender ſucculent Plants, where it may have free Air in warm Weather, and be ſcreened from Cold and Wet; but in Autumn it muſt be removed into the Stove, where it ſhould be kept in a moderate Temperature of Warmth. This is propagated by Cuttings, taken off in Summer, and planted in ſmall Pots, and plunged into a moderate hot Bed; when they have taken Root, they ſhould be removed into the Stove. This Plant muſt have but little Water, eſpecially in Winter.

The *African* Kinds are all of them propagated by Cuttings in any of the Summer Months, which ſhould be laid in a dry Place for a Week or more after they are cut off, before they are planted; for theſe abound with Juice through every Part of the Plant, which will certainly rot the Cuttings, if they are not ſuffered to lie out of the Ground, that the wounded Part may heal over, and the great Redundancy of Sap evaporate. The Soil in which theſe Plants thrive beſt, is one third freſh light Earth from a Paſture, one third Sand, and the other third Part Lime Rubbiſh, and rotten Tan, in equal Quantities; theſe ſhould be well mixed, and laid in a Heap 6 or 8 Months before it is uſed; turning it over five or ſix times, that the Parts may the better incorporate; and before it is uſed, it will be proper to paſs it through a Screen, to ſeparate the large Stones, Clods, *&c.*

Having prepared the Earth, and your Cuttings being in fit Order for planting, you muſt fill as many Halfpenny Pots with Earth as you have Cuttings; then put one Cutting in the Middle of each Pot about two Inches deep or more, according to their Strength; then give them a little Water to ſettle the Earth cloſe about them, and ſet the Pots in a warm ſhady Place for about a Week, to prepare the Cuttings for putting forth Roots; after which they ſhould be plunged into a moderate hot Bed of Tanners Bark, which will greatly facilitate their rooting; but obſerve to give them Air, by raiſing the Glaſſes at all Times when the Weather will permit; as alſo to ſhade the Glaſſes in the Heat of the Day.

In about a Month after planting, they will be rooted, when you muſt begin to expoſe them to the open Air by Degrees; firſt drawing the Pots out of the Tan, and ſetting them on the Top, then raiſe the Glaſſes very high in the Day Time; and in about a Week after remove the Pots into a Green-houſe, and there harden them for another Week; after which they may be expoſed to the open Air in a well defended Place, obſerving not to ſet them in a Place too much expoſed to the Sun, until they have been inured to the open Air ſome Time.

In this Place the Plants may remain until the Beginning of *October*; when you ſhould remove them into the Conſervatory, placing them as near the Windows as poſſible at firſt, letting them have as much free open Air as the Seaſon will permit, by keeping the Windows open whenever the Weather is good: and now you muſt begin to abate your Waterings, giving it to them ſparingly; but you ſhould not ſuffer its Leaves to ſhrink for Want of Moiſture, which is another Extreme ſome People run into for Want of a little Obſervation; and when they are ſuffered to ſhrink for Want of ſufficient Moiſture to keep their Veſſels diſtended, they are rendered incapable of diſcharging this Moiſture whenever they receive it again. This Sort ſhould be placed in a moderate Stove in Winter, nor muſt it be ſet abroad till Midſummer; for it is much tenderer than any of the others.

The beſt Method to treat theſe Plants is, to place them in an open, airy, dry Glaſs Caſe, among Ficoides's and *African* Houſleeks, where they may enjoy as much Sunſhine as poſſible, and have a free dry open Air; for if they are placed in a green Houſe among ſhrubby Plants, which perſpire freely, it will fill the Houſe with damp Air, which theſe ſucculent Plants are apt to imbibe; and and thereby becoming too replete with Moiſture, often caſt their Leaves; and many Times their Branches alſo decay, and the whole Plant periſhes.

COURBARIL. *See* Hymenæa.

COWSLIP. *See* Primula.

CRAB-TREE. *See* Malus.

CRAMBE. *Lin. Gen. Plant.* 739. *Tourn. Inſt. R. H.* 211. *Tab.* 100. [Κϱαμβη, *Gr.*] Sea-Cabbage.

The *Characters* are,

The Empalement of the Flower is compoſed of 4 *oval concave Leaves which ſpread open; the Flower hath* 4 *Petals, placed in Form of a Croſs, which are large, obtuſe, and ſpread open; it hath ſix Stamina, two of which are the Length of the Empalement, the other four are longer, and bifid at their Points; theſe are terminated by ſingle Summits, which branch into Threads on their Outſide. The Petals have Honey Glands on their Inſide longer than the Stamina. It hath an oblong Germen, but no Style, crowned by a thick Stigma. The Germen becomes a round dry Capſule, with one Cell, encloſing one roundiſh Seed.*

The *Species* are,

1. CRAMBE *foliis cauleque glabris. Pl. Suec.* 570. Sea Cabbage with ſmooth Stalks and Leaves. This is the *Crambe maritima braſſicæ folio. Tourn. Inſt.* 211. Maritime Cabbage, with a Colewort Leaf.

2. CRAMBE *foliis profundè laciniatis, caule erecto, ramoſo.* Sea Cabbage with Leaves deeply cut, and an upright, branching Stalk.

3. CRAMBE *foliis ſcabris, caule glabro. Lin. Sp. Plant.* 671. Sea Cabbage with rough Leaves, and a ſmooth Stalk. This is the *Crambe foliis & foliolis alternatim pinnatifidis. Prod. Leyd.* 330. Sea Cabbage whoſe Leaves and ſmaller Segments, are alternately pinnatified.

4. CRAMBE *foliis cauleque ſcabris. Hort. Upſal.* 193. Sea Cabbage with rough Stalks and Leaves. This is the *Rapiſtrum maximum rotundifolium monoſpermum. Corn. Canad.* Greateſt round leaved Baſtard Rape with a ſingle Seed.

5. CRAMBE *foliis laciniatis, laciniis oppoſitis, integerrimis, foliis cauleque glabris.* Sea Cabbage with cut

Leaves, whoſe Jags are oppoſite and entire, and ſmooth Stalks and Leaves. This is the *Rapiſtrum Orientale, Acanthi folio.* Eaſtern Baſtard Rape with a Bear's breech Leaf.

The firſt Sort ſends out many broad ſmooth Leaves, deeply jagged on their Sides in obtuſe Segments, of a grayiſh Colour, ſpreading near the Ground; between theſe ariſe a thick ſmooth Foot Stalk about a Foot high, which ſpreads out into many Branches, which have at each Joint one Leaf of the ſame Form of thoſe below, but much leſs: Theſe Foot Stalks ſubdivide again into many ſmaller, garniſhed with white Flowers growing in a looſe Spike, compoſed of four concave Petals placed in Form of a Croſs; theſe are ſucceeded by round dry Seed Veſſels, about the Size of large Peaſe, having a ſingle Seed in each. It flowers in *June*, and the Seeds ripen in Autumn. The Roots of this Sort creep under Ground, whereby it propagates very faſt.

The Seeds of the 2d Sort were ſent me from *Peterſburgh*. This hath a perennial Root, which ſends out ſeveral oblong ſmooth Leaves, pointed, and irregularly cut on their Sides, into acute Segments almoſt to the Mid-rib; theſe are very ſmooth and of a Sea-green Colour; between theſe ariſe the Stalk, which grows 3 Feet high, garniſhed below by oblong pointed Leaves acutely indented on their Edges. The Stalks branch out into many ſmaller, and theſe ſubdivide again into leſs, garniſhed with looſe Spikes of white Flowers like thoſe of the firſt Sort, and ſucceeded by Seeds of the ſame Form. This differs greatly from the firſt, in the Shape of its Leaves, which are longer, ending in Points, and the Segments do the ſame, whereas thoſe of the other are blunt, and not half ſo deeply cut. The Stalks riſe more than twice the Height of the firſt, branch out more, and the Branches grow more erect. Theſe Differences are conſtant, where the Plants grow in the ſame Soil.

The 3d Sort grows naturally in the *Eaſt*. This hath a perennial Root, from which ariſe many Leaves in the Spring, which are alternately divided to the Mid-rib, and theſe Diviſions are again alternately cut on their Edges into many Points, ſo that they have the Appearance of winged Leaves, and are of a grayiſh Colour. The Stalks riſe about 2 Feet high, and divide into many Branches, terminated by looſe Panicles of ſmall white Flowers placed in Form of a Croſs, ſucceeded by ſmall round Capſules, each containing a ſingle Seed. This flowers in *June*, and the Seeds ripen in Autumn.

The 4th Sort is an annual, which grows naturally in *Spain* and *Italy*. This riſes with a very branching Stalk near 3 Feet high, garniſhed with roundiſh Heart-ſhaped Leaves indented on their Edges, ſtanding on long Foot Stalks, the Branches ſubdivide into many ſlender ones, which end in long looſe Spikes of ſmall white Flowers, ſucceeded by ſmall round dry Seed Veſſels, which contain a ſingle Seed. The Leaves and Stalks are rough. It flowers in *June*, and the Seeds ripen in Autumn.

The 5th Sort hath a perennial Root; this grows naturally in the *Levant*, from whence Dr. *Tournefort* ſent the Seeds to the Royal Garden at *Paris*, where they ſucceeded, and moſt of the curious Gardens in *Europe* have been ſupplied with it from thence. The Leaves of this are more than a Foot long, and almoſt triangular, but are deeply cut in on the Sides, into oppoſite Segments, which terminate in Points. Theſe are ſmooth and of a Sea-green Colour, ſpreading near the Ground. The Stalks riſe more than 2 Feet high, branching upward into many ſmaller, which are naked below, but end in looſe Spikes of whitiſh yellow Flowers, which are ſmall, and are ſucceeded by ſmall round Seed Veſſels incloſing a ſingle Seed.

The firſt of the Species is found wild upon Sea Shores in divers Parts of *England*; but particularly in *Suſſex* and *Dorſetſhire* in great Plenty, where the Inhabitants gather it in Spring to eat, preferring it to any of the Cabbage Kind; as it generally grows upon the gravelly Shore, where the Tide flows over it, the Inhabitants obſerve where the Gravel is thruſt up by the Shoots of this Plant, and open the Gravel, and cut them before they come out, and are expoſed to the open Air, whereby the Shoots appear as if they were blanched; and when they are cut ſo young, they are very tender and ſweet; but if they are ſuffered to grow till they are green, they become tough and bitter.

This Plant may be propagated in a Garden, by ſowing the Seed, ſoon after it is ripe, in a ſandy or gravelly Soil, where it will thrive exceedingly, and increaſe greatly by its creeping Roots, which will ſoon overſpread a large Spot of Ground, if encouraged; but the Heads will not be fit to cut until the Plants have had one Years Growth; and in order to have it good, the Bed in which the Plants grow, ſhould, at *Michaelmas*, be covered over with Sand or Gravel about four or five Inches thick, which will allow a proper Depth for the Shoots to be cut before they appear above Ground; and if this is repeated every Autumn, as is practiſed in earthing Aſparagus Beds, the Plants will require no other Culture. This may be cut for Uſe in *April* and *May*, while it is young; but if the Shoots are ſuffered to remain, they will produce fine regular Heads of white Flowers, which appear very handſome, and will perfect their Seeds, by which they may be propagated.

The other Sorts are only preſerved in curious Gardens for Variety, but are not of any Uſe or Beauty. The perennial Sorts may be propagated as the firſt.

CRANE's-BILL. *See* Geranium.

CRANIOLARIA. *Lin. Gen. Martynia. Houſt.*

The *Characters* are,

The Flower hath a permanent Empalement, compoſed of 4 ſhort narrow Leaves, which ſpread open with a large ſwoollen Hood, cut longitudinally on the Side. The Flower hath one Petal which is unequal, having a very long narrow Tube, whoſe Brim is divided into two Lips, the upper being roundiſh and entire, but the under is divided into 3 Parts, the middle Segment being the largeſt. It hath 4 Stamina, two of which are the Length of the Tube, and two are ſhorter; theſe are terminated by ſingle Summits; at the Bottom of the Tube is ſituated an oval Germen, ſupporting a ſlender Style, crowned by an obtuſe thick Stigma. The Germen becomes an oval leathery Fruit, pointed at both ends, opening with two Valves, incloſing a depreſſed, woody Nut, pointed at both Ends and recurved, having 2 or 3 Furrows, ſo as to reſemble a Skull, opening in two Parts.

The *Species* are,

1. CRANIOLARIA *foliis cordatis, angulatis. Lin. Sp. Plant*, 618. *Craniolaria* with Heart-ſhaped, angular Leaves. This is the *Martynia annua, villoſa, & viſcoſa,*

aceris folio, flore albo, tubo longiſſimo. Houſt. Mſſ. Annual, hairy, viſcous *Martynia*, with a Maple Leaf, white Flower, and very long Tube.

2. CRANIOLARIA *foliis lanceolatis,. dentatis. Lin. Sp. Plant.* 618. *Craniolaria* with Spear-ſhaped, indented Leaves. This is the *Geſnera arboreſcens amplo flore fimbriato & maculoſo. Plum. Nov. Gen.* 27. Tree *Geſnera* with an ample, fringed Flower.

The firſt Sort was diſcovered in the Neighbourhood of *Carthagena* in *New Spain.* This is an annual Plant, which riſes with a branching Stalk, about two Feet high, the Branches come out by Pairs oppoſite, which are hairy and viſcous; the Leaves alſo are placed oppoſite upon very long Foot Stalks; theſe are of different Shapes, ſome of them are divided into five Lobes, others into three, and ſome are almoſt Heart-ſhaped, ending in acute Points; theſe are hairy, and clammy. The Flowers are produced from the Side, and alſo at the End of the Branches, ſtanding on ſhort Foot Stalks, having an inflated Sheath or Cover, out of which the Tube of the Flower ariſes, which is 7 or 8 Inches long, and very ſlender, but at the Top is divided into two Lips, the under being large, and divided into three broad Segments, the Middle being larger than the other two; the upper Lip is roundiſh and entire; the Flowers are ſucceeded by oblong Fruit, having a thick dry Skin, which opens lengthways, incloſing a hard, furrowed Nut, with two recurved Horns. This is an annual Plant, whoſe Seeds muſt be ſown on a hot Bed in Spring, and when the Plants are fit to remove, they ſhould be each planted in a ſmall Pot, filled with light freſh Earth, and plunged into a moderate hot Bed, carefully ſhading them from the Sun, till they have taken new Root, after which they ſhould have free Air admitted in Proportion to the Warmth of the Seaſon, to prevent their drawing up weak, and treated as other tender exotick Plants, being too tender to thrive in the open Air in *England*, ſo that when they are grown too large to remain under the Frames, they ſhould be removed into the Bark Stove, and plunged in the Tan Bed, where they will flower in *July*, and with good Management often perfect Seeds in Autumn. But the Seeds of this Plant ſhould remain on till they drop, otherwiſe they will not grow; for the outer Covers of theſe Seeds ſplit open and drop off, like thoſe of the Almond, before the Seeds are fully ripened.

The 2d Sort grows naturally at the *Havannah*, and in other Iſlands in *America*. This riſes with a ſhrubby Stalk 10 or 12 Feet, dividing upward into a few Branches garniſhed with Spear-ſhaped Leaves, cut on their Edges, theſe are ſoft and hairy. The Flowers are produced from the Side of the Branches, growing ſeveral together on the ſame Foot Stalk, they are ſhaped like thoſe of the Foxglove of a greeniſh yellow Colour, with brown Spots on the Inſide; the Flowers have a ſwelling Tube which is recurved, and the Brim is ſlightly divided into five unequal Segments. Theſe appear in *July*, but are not ſucceeded by Seeds in *England.*

This Sort is propagated by Seeds, which muſt be procured from the Countries where it grows naturally, and ſhould be ſown on a hot Bed in Spring; when the Plants are fit to remove, they ſhould be each planted in a ſmall Pot, filled with light Kitchen Garden Earth, and plunged into a freſh hot Bed, where they muſt be ſhaded from the Sun till they have taken freſh Root, then they muſt have Air admitted according to the Warmth of the Seaſon, and frequently watered during the Heat of Summer. In Autumn they muſt be removed into the Bark Stove, and plunged in the Tan Bed; during the Winter Seaſon, they ſhould not have much Water, and may be treated as other tender Plants from thoſe Countries. The Plants ſeldom flower in *England* till the third Year, and as they do not produce Seeds here, it is with difficulty the Sort is preſerved in the *European* Gardens, as there is no other Method of propagating them but by Seeds.

CRASSULA. *Dillen. Hort. Elth.* 114. *Lin. Gen. Plant.* 352. Leſſer Orpine or Live ever. This Name was formerly applied to the *Anacampſeros* or Orpine.

The *Characters* are,

The Flower hath a five leaved Empalement; the Corolla conſiſts of 5 *narrow Petals, joined at their Baſe, but reflexed, and ſpread open, at the Brim: In the Bottom of the Tube are ſituated* 5 *Nectaria, and there are* 5 *Stamina ſituated round theſe, which ariſe from the Bottom of the Tube, and extend to the Brim. At the Bottom of the Tube are placed* 5 *oblong, pointed Germina; theſe become five Capſules, opening lengthways, and filled with ſmall Seeds.*

The *Species* are,

1. CRASSULA *foliis planis cartilagineo-ciliatis, baſi connato vaginantibus. Vir. Cliff.* 26. Leſſer Orpine, with plain Leaves, having ſtiff Edges ſet with ſilver Hairs, and their Baſe ſurrounding the Stalk like Sheaths. This is the *Cotyledon Africana fruteſcens, flore umbellato Coccineo. Com. rar.* 24. Shrubby *African* Navelwort, with Umbels of ſcarlet Flowers.

2. CRASSULA *foliis lanceolato-ſubulatis ſeſſilibus connatis, canaliculatis; ſubtus convexis. Hort. Cliff.* 116. Leſſer Orpine with Spear-ſhaped, awl-faſhioned Leaves ſurrounding the Stalks with their Baſe, channeled on their upper Side, and convex on their under. This is the *Craſſula altiſſima perfoliata. Dill. Hort. Elth.* 114. Talleſt *Craſſula* with perfoliate Leaves.

3. CRASSULA *foliis oppoſitis, obtuſè ovatis, integerrimis, hinc anguſtioribus. Hort. Cliff.* 496. Leſſer Orpine with oval, blunt Leaves, placed oppoſite, which are entire, and narrow at their Baſe. This is the *Craſſula Anacampſerotis folio. Hort. Elth.* 115. *Tab.* 65. *Craſſula* with an Orpine Leaf.

4. CRASSULA *foliis oppoſitis, oblongis, planiuſculis, diſtinctis, ciliatis. Hort. Cliff.* 496. Leſſer Orpine with oblong, plain Leaves placed oppoſite, which are bordered with ſilver Hairs.

5. CRASSULA *foliis oppoſitis, patentibus, ſcabris. Lin. Sp. Plant.* 283. Leſſer Orpine, with rough, ſpreading Leaves growing oppoſite. This is the *Cotyledon Africana fruteſcens, foliis aſperis, anguſtis, acuminatis, flore vireſcente. Mart. Cent.* 24. Shrubby *African* Navelwort, with narrow, rough, pointed Leaves, and a greeniſh Flower.

6. CRASSULA *foliis ſubulatis, radicatis, caule nudo. Hort. Cliff.* 116. Leſſer Orpine with Awl-ſhaped Leaves, which put out Roots, and a naked Stalk. This is the *Craſſula Cæſpoſa longifolia. Hort. Elth.* 116. *Tab.* 98. *Craſſula* with a long Onion Leaf.

7. CRASSULA *caule flaccido, foliis connatis, cordatis, ſucculentibus, floribus confertis terminalibus.* Leſſer Orpine with a weak Stalk growing through the Leaves,

which are Heart-ſhaped, and ſucculent, and Flowers growing in Cluſters at the End of the Branches.

8. Crassula *foliis longis, teretibus, alternis, caule fruticoſo, ramoſo.* Leſſer Orpine with long, taper Leaves, placed alternate, and a branching, ſhrubby Stalk.

9. Crassula *caule flaccido, prolifero, determinatè-folioſo, foliis patentiſſimis, imbricatis. Hort. Cliff.* 496. Leſſer Orpine with a proliferous, weak Stalk, which is leafy, and Leaves placed in the Manner of Tiles, and ſpreading open. This is the *Sedum Afrum, ſaxatile, foliis ſedi vulgaris, in roſam verè Compoſitis. Boerh. Ind. Alt.* 1. 287. *African* Rock Houſleek, with Leaves like the common, and ſpreading like a Roſe.

10. Crassula *caule flaccido repente, foliis oppoſitis Lin. Sp. Pl.* 283. Leſſer Orpine with a weak, creeping Stalk, and Leaves placed oppoſite, and a ſhrubby, ſucculent Stalk. *Craſſula portulacæ facie repens. Hort. Elth.* Creeping *Craſſula* with the Appearance of Purſlane.

11. Crassula *foliis obverſè-ovatis, oppoſitis, caule fruticoſo, ſucculento.* Leſſer Orpine with obverſe, oval Leaves, placed oppoſite. This is the *Craſſula portulacæ facie arboreſcens. Hort. Elth.* 120. *Tab.* 90. Tree-like *Craſſula* with the Appearance of Purſlane.

The 1ſt Sort hath a round reddiſh Stalk, jointed, riſing about 3 Feet high, which divides upward into many irregular Branches; theſe are garniſhed with oblong, plain Leaves placed oppoſite, having a griſtly Border, ſet with ſmall ſilver Hairs; and cloſely embrace the Stalks with their Baſe, and form a Sort of Sheath or Cover to it. The Flowers are produced at the End of the Branches, in cloſe Umbels, ſitting very cloſe to the End of the Branches, theſe are Funnel-ſhaped, having pretty long Tubes cut at the Top into five Parts which ſpread open; theſe are of a fine ſcarlet Colour and ſtand erect; they uſually flower in *July* or *Auguſt*, but never produce any Seeds in *England*. This is propagated by Cuttings during any of the Summer Months; theſe ſhould be taken off about a Week before they are planted, and layed in a dry Place that the wounded Part may heal over; then they ſhould be each planted in a ſmall Pot filled with light ſandy Earth, and plunged into a moderate hot Bed, giving them but little Water; in about ſix Weeks theſe will have put out Roots, and begin to grow, when they ſhould have a large Share of Air admitted to them, and muſt be gradually inured to bear the open Air, into which they ſhould be removed, placing them in a ſheltered Situation, where they may remain till Autumn; when they muſt be removed into a dry airy Glaſs Caſe, where they may enjoy the Sun as much as poſſible, and be ſcreened from the Wet and Cold. In warm dry Weather during the Summer Months while they are abroad, theſe Plants ſhould be gently watered 2 or 3 times a Week, but in Winter they ſhould have very little Water, leſt it rot their Stems. They require no artificial Heat in Winter, but muſt be ſecured from Froſt and Wet.

The 2d Sort will riſe with an upright Stalk, 10 or 12 Feet high, if not broken or injured, but it will require Support; for the Stalks being ſlender, and the Leaves very weighty they are very ſubject to break, if expoſed to the Wind. The Leaves of this Plant are about 3 Inches long, they are hollowed on the upper Side, and have a convex Ridge on their lower, and are placed oppoſite, ſurrounding the Stalks with their Baſe, and theſe alternately croſs each other. They are very thick, ſucculent, and of a pale green Colour, ending in acute Points; at the Top of the Stalk the Flowers are produced in large Cluſters; theſe are of a whitiſh herbaceous Colour, having ſhort Tubes, which are cut into 5 Parts at the Brim, which ſpread open. The Stalk which ſuſtains the Flowers is pretty thick and ſucculent, generally turning firſt downward, and then upward again, almoſt in the Form of a Syphon. It flowers in *July*, but doth not produce Seeds here. This Sort is propagated by Cuttings in the ſame Manner as the firſt, and the Plants require the ſame Treatment.

The 3d Sort riſes with a weak ſucculent Stalk about 2 Feet high, ſending out many irregular Branches, garniſhed with oblong, oval, thick Leaves, plain on their upper Side, but convex below, of a deep green, and their Borders ſet with a few ſilvery Hairs. The Flower Stalk riſes from the Top of the Branches, and is from 4 to 6 Inches long, putting out ſeveral Side Branches, which grow erect; theſe are terminated by large Cluſters of ſmall greeniſh Flowers in *June* and *July*.

This is propagated by Cuttings in the ſame Manner as the two former, but being more hardy, ſhould not be ſo tenderly treated; for if the Cuttings of this are planted in a Border of light Earth, they will put out Roots, and may afterward be taken up and potted.

The 5th Sort hath a very weak ſucculent Stalk, about a Foot and a Half high, dividing upward into ſmall Branches, garniſhed with thin rough Leaves, which are flat, near 2 Inches long, and a Quarter broad at their Baſe, gradually narrowing to a Point; theſe are rough, placed oppoſite, and embrace the Stalks with their Baſe. The Flowers come out in ſmall Cluſters at the End of the Branches; theſe are ſmall, and of an herbaceous Colour, ſo make no Figure; they appear in *June* and *July*. This may be propagated by Cuttings, which may be treated as the 4th Sort.

The 6th Sort never riſes with a Stalk, but the Leaves come out cloſe to the Ground, forming a Sort of Head, theſe are taper and ſucculent, ending in Points, and frequently put out Roots; out of the Center of theſe ariſe the Flower Stalk, which grows about ſix Inches high, and branches into two or three Parts upward, each being terminated by Cluſters of greeniſh Flowers, which make no great Appearance. It flowers in *May*, and ſometimes again in the latter Part of Summer.

This is propagated by taking off the Heads, or Side Offſets, which ſhould be laid to dry 3 or 4 Days before they are planted, then they may be treated as the other hardier Sorts before-mentioned.

The 7th Sort hath been lately brought to *Holland*, from the *Cape of Good Hope*; it was ſent me by Dr. *Van Royen*; this hath very ſlender Stalks, which are reddiſh, and full of Joints; theſe trail upon the Ground, unleſs ſupported, and are cloſely garniſhed with thick, ſucculent, Heart ſhaped Leaves, placed oppoſite, which are cloſely joined at their Baſe, ſo that the Stalks run through them; they are of a grayiſh Colour; the Stalks are divided, and grow about 8 or 9 Inches long, terminated by Cluſters of ſmall white Flowers, ſitting very cloſe to the Top of the Stalks; theſe appear in Spring, and alſo again in the latter Part of Summer. It is propagated by

Cuttings, as the other hardier Sorts, and may be treated inthe ſame Way.

The 8th Sort was ſent me from *Leyden*, by the ſame Gentleman; this riſes with a ſhrubby Stalk, 4 or 5 Feet high, dividing into many Branches, which at firſt are taper and ſucculent, but by Age become ligneous; theſe are garniſhed with very ſlender, taper, ſucculent Leaves, near 3 Inches long, and are flaccid, generally turning downward, eſpecially in Winter, when they are in the Houſe; but as it hath not as yet flowered here, I can give no farther Deſcription of it. This is equally hardy with the former Sorts, and takes eaſily from Cuttings, ſo may be treated in the ſame Way.

The 9th Sort is a low Plant, with the Appearance of Houſleek, having open ſpreading Heads, which grow on the Ends of very ſlender trailing Stalks, which are produced in Plenty on every Side the Parent Plant, like the childing Marigold. The Flower Stalks ariſe from the Center of theſe Heads, which are naked, about 4 Inches long, and are terminated by cloſe Cluſters of herbaceous Flowers, which appear in different Seaſons of the Year. This Plant propagates very faſt by the Side Heads, which come out from the Parent Plant, which frequently put out Roots as they trail on the Ground, ſo may be taken off, and potted, during any of the Summer Months; this is equally hardy with the former Sorts, ſo the Plants may be treated in the ſame Way.

The 10th Sort hath very ſlender, trailing, ſucculent Stalks, of a reddiſh Colour, which put out Roots at the Joints as they lie upon the Ground. The Stalks and Leaves of this Sort have the Appearance of Purſlane, but trail on the Ground like Chickweed. The Flowers are produced in ſmall Cluſters at the End of the Branches; they are white, with a Bluſh of purple at their Brim; they appear in Summer at different Times, and are often ſucceeded by Seeds. This Sort is eaſily propagated by its trailing Branches, and the Plants require the ſame Treatment as the other hardy Sorts.

The 11th Sort riſes with a very thick ſtrong ſucculent Stalk, 3 Feet high, ſending out Branches on every Side, ſo as to form a Kind of Pyramid, the lower Branches being extended to a great Length, and the other diminiſhing gradually to the Top; theſe are of a red, or a purpliſh Colour, and very ſucculent; they are garniſhed with roundiſh ſucculent Leaves, very like thoſe of Purſlane, from whence the Gardeners have titled it the Purſlane Tree.

This Sort hath not flowered in *England*, though it has been many Years in the Gardens, ſo that we are not ſure if it is properly ranged in this Genus, but from the Appearance it ſeems nearly allied to ſome of the other Species, on which Account Dr. *Dillenius* has placed it here.

It is propagated with great Facility by Cuttings, planted during any of the Summer Months; theſe ſhould be laid to dry for ſome Days before they are planted, that the wounded Part may be healed over, otherwiſe they will rot. This Sort is ſomewhat tenderer than the four Sorts laſt mentioned, ſo muſt be placed in a warm Glaſs Caſe in Winter, where it may enjoy the full Sun, and ſhould have very little Water during that Seaſon; in Summer the Plants ſhould be placed abroad in a ſheltered Situation, and in warm Weather refreſhed with Water twice a Week, but as the Stalks are very ſucculent, too much Wet at any Seaſon is very hurtful to them.

All the hardy Sorts of *Craſſula*, may be treated as the *Ficoides*, and other hardier Kinds of ſucculent Plants, with this Difference only, not to give them ſo much Water, but the 1ſt, 2d, and 11th Sorts require a warm dry Glaſs Caſe in Winter, and muſt not be ſo long expoſed abroad in Summer, as the other Species, and ſhould have but little Water, eſpecially in Winter.

Theſe Plants are preſerved in moſt curious Gardens for Variety, which conſiſts more in the Appearance of the Plants, than in the Beauty of their Flowers, except the 1ſt Sort, whoſe Flowers are of a beautiful Scarlet, and grow in cloſe Bunches at the End of the Branches, ſo that when ſeveral of the Branches are garniſhed with Flowers at the ſame Time, they make a fine Appearance, and theſe Flowers continue in Beauty a long Time; but the Flowers of the other Sorts are ſmall, and moſt of them are of an herbaceous Colour, ſo make no Figure.

CRATÆGUS. *Tourn. Inſt. R. H.* 633. *Lin. Gen. Plant.* 547. The Wild Service.

The *Characters* are,

The Flower hath a permanent Empalement of one Leaf, cut into 5 concave Segments, which ſpread open. It hath 5 roundiſh concave Petals, inſerted into the Empalement, and many Stamina, terminated by roundiſh Summits, which are alſo inſerted in the Empalement. The Germen is ſituated under the Flower, ſupporting 2 ſlender Styles, crowned by roundiſh Stigmas. The Germen becomes an oval, or roundiſh umbilicated Berry, incloſing two oblong hard Seeds.

The *Species* are,

1. CRATÆGUS *foliis ovatis inæqualiter ſerratis, ſubtus tomentoſis. Hort. Cliff.* 187. Wild Service with oval Leaves unequally ſawed, and woolly on their under Side, commonly called *Aria Theophraſti*, and in ſome Countries the white Beam, or white Leaf Tree.

2. CRATÆGUS *foliis cordatis ſeptangulis, lobis infimis divaricatis. Lin. Sp. Plant.* 476. Wild Service with Heart-ſhaped Leaves, having ſeven Angles, whoſe lower Lobes ſpread aſunder. This is the *Sorbus Torminalis. Cam. Epit.* 162. Wild, or Maple-leaved Service.

3. CRATÆGUS *foliis oblongo-ovatis ſerratis, utrinque virentibus.* Wild Service with oblong, oval, ſawed Leaves, which are green on both Sides.

4. CRATÆGUS *foliis oblongo-ovatis, crenatis, ſubtus argenteis.* Wild Service with oblong, oval, crenated Leaves, which are white on their under Side. This is the *Cratægus Virginiana foliis arbuti. Tourn. Inſt. R. H.* 633. *Virginia Cratægus*, or wild Service with an Arbutus Leaf.

The 1ſt Sort grows naturally on the chalky Hills of *Kent*, *Surry*, *Suſſex*, and other Parts of *England*, and grows to the Height of 30 or 40 Feet, with a large Trunk dividing upward into many Branches; the young Shoots have a brown Bark, covered over with a mealy Down; theſe are garniſhed with oval Leaves between 2 and 3 Inches long, and one and a Half broad in the Middle, of a light green on their upper Side, but very white on their under, having many prominent tranſverſe Veins, running from the Mid-rib to the Border, where they are unequally ſawed, ſome of the Indentures being much deeper, and the Segments broader than others. The Flowers are produced at the Ends of the Branches in Bunches, their Foot Stalks being mealy, as are alſo the

Empalements of the Flowers, which are cut into 5 obtuſe Segments, and reflexed. The Flowers have 5 ſhort Petals, which ſpread open, and are like thoſe of the Pear Tree, having a great Number of Stamina of the ſame Length with the Petals, terminated by oval Summits. The Germen, which is ſituated below the Flowers, becomes an oval Fruit, crowned with the Empalement of the Flower, having one Cell, in which is incloſed 3 or 4 Seeds. It flowers in *May*, and the Fruit ripens in Autumn.

This Tree may be propagated by Seeds, which ſhould be ſown ſoon after they are ripe; for if they are kept out of the Ground till Spring, they remain at leaſt one Year in the Ground, before the Plants appear, ſo that the Fruit ſhould be buried in the Ground, as is practiſed with common Haws, Holly Berries, and other hard Seeds which do not come up the ſame Year; and when the Plants come up, they may be treated in the ſame Manner as the Haws, but they ſhould by no Means be headed, or cut down; when theſe Plants are on a poor chalky Soil, they make great Progreſs, and the Wood is very white and hard, ſo has been often uſed for making Cogs for Mills, and many other Purpoſes where hard tough Timber is wanted.

It may alſo be propagated by Layers as the Lime Tree and Elm, but theſe ſhould be laid in the young Wood, and they are two Years before they have ſufficient Roots to tranſplant. I have alſo raiſed a few Plants from Cuttings, which were planted in Autumn, in a ſhady Border, but there was not more than one eighth Part of the Cuttings which ſucceeded, therefore I would recommend raiſing them from Seeds, for the Trees ſo raiſed grow much larger and ſtraiter than thoſe raiſed either from Layers, or Cuttings.

The Tree will take by grafting, or budding on Pear Stocks very well, and Pears will take by grafting upon theſe Trees, ſo that there is a nearer Affinity between the *Cratægus* and Pear, than there is between either of theſe and the *Meſpilus*; for although both theſe will ſometimes take upon the *Meſpilus*, yet neither of them thrive ſo well, or laſt ſo long, when grafted, or budded upon thoſe Stocks, as they do upon each other; therefore *Tournefort*, who has joined the *Cratægus* in his Section, with the Pear and Quince, has come nearer to the natural Diviſion of their Genera, than thoſe who have joined the *Cratægus* to the *Meſpilus*.

There is another Species of this Tree, which grows naturally about *Verona*, from whence I have received dried Samples, but they were without Flower and Fruit, and came over by the ſame Title as the former, for as there is no other growing in that Neighbourhood, ſo they have ſuppoſed it to be the common Sort; but if that is the *Aria* of *Theophraſtus*, thoſe Trees which grow in *England* are not, for the Leaves of the Sort from *Verona* are Spear-ſhaped, above an Inch long, and not ſo broad by an Inch as thoſe of the *Engliſh*, and the Nerves on the under Side are purpliſh, the Leaves terminating in acute Points, ſo I make no Doubt of its being a different Species, but as I have not ſeen the growing Tree, ſo I would not enumerate it till I had been better informed.

The 2d Sort grows naturally in many Parts of *England*, and is chiefly found on ſtrong Soils; it formerly grew in great Plenty in *Cane Wood*, near *Hamſtead*, and lately there was ſome young Trees growing in *Biſhops Wood*, near the ſame Place; this riſes 40 or 50 Feet high, with a large Trunk, ſpreading at the Top into many Branches, ſo as to form a large Head. The young Branches are covered with a purpliſh Bark, covered with white Spots, and are garniſhed with Leaves placed alternately, ſtanding on pretty long Foot Stalks; theſe are cut into many acute Angles, like thoſe of the Maple Tree; they are near 4 Inches long, and 3 broad in the Middle, having ſeveral ſmaller Indentures toward the Top; they are of a bright green on their upper Side, but a little woolly on their under. The Flowers are produced in large Bunches toward the End of the Branches, they are white, and ſhaped like thoſe of the Pear Tree, but ſmaller, and ſtand upon longer Foot Stalks; theſe appear in *May*, and are ſucceeded by roundiſh compreſſed Fruit, which are ſhaped like large Haws, and ripen late in Autumn, when they are brown, and if kept till they are ſoft, in the ſame Way as Medlars, have an agreeable acid Flavour. The Fruit of this Tree is ſold in the *London* Markets in Autumn. The Wood is hard, very white, and uſeful for many Purpoſes, but particularly to the Millwrights. It may be propagated as the former Sort, but requires a ſtrong Soil.

The 3d Sort grows naturally on Mount *Baldus*, from whence I received it, and on other mountainous Parts of *Italy*; this riſes with a woody Trunk, about 20 Feet high, dividing into many Branches, covered with a purpliſh ſpotted Bark, and cloſely garniſhed with oblong ſawed Leaves, ſtanding alternate on very ſhort Foot Stalks; they are about 3 Inches long, and one and a Half broad, in the broadeſt Part, leſſening toward both Ends; they are ſlightly ſawed on their Edges, and are of a deep green on both Sides. The Flowers are produced at the End of the Branches in ſmall Bunches, which have rarely more than 4 or 5 in each; they are white, and much ſmaller than thoſe of the former Sorts; theſe are ſucceeded by Fruit about the Size of the common Haw, which is of a dark brown Colour when ripe. It flowers in *May*, and the Fruit ripens in Autumn.

This Sort may be propagated as the firſt, but requires a ſtrong deep Soil, otherwiſe it will not thrive. It is very hardy in reſpect to Cold, but at preſent is very rare in *England*.

The 4th Sort grows naturally in moſt Parts of *North America*; this ſeldom riſes more than 5 or 6 Feet high, it hath generally many ſhrubby Stalks riſing from the ſame Root, which put out ſmall Branches on every Side; theſe are garniſhed with Leaves placed alternate, ſtanding on very ſhort Foot Stalks; they are about two Inches long, and one broad, ending in a Point, are ſlightly indented on their Edges, of a deep green on their upper Side, and a little woolly on their under, of a yellowiſh white Colour; theſe Leaves in Autumn change to purple ſome Time before they fall off. The Flowers are produced in ſmall Bunches at the End, and alſo from the Side of the Branches; they are ſmall, white, and ſhaped like thoſe of the former Sorts, but the Petals are narrower; theſe appear in *May*, and are ſucceeded by ſmall Fruit, ſhaped like the common Haw, which turn red in Autumn, and when fully ripe are of a dark brown Colour; theſe frequently ripen here.

This Sort may be propagated by Seeds, which ſhould be ſown in Autumn, as hath been directed for the firſt Sort; but as theſe Seeds are frequently brought from *America*, and do not arrive here till Spring, ſo they ſhould be ſown in Pots, which may be plunged into the Ground in a ſhady Situation, where they may remain till Autumn, when they ſhould be removed and plunged into an old Tan Bed, under a Frame, where they may be expoſed to the open Air in mild Weather, and ſheltered from hard Froſt. In the Spring following the Plants will come up, which ſhould be gradually inured to the open Air, and the following Summer the Pots may be again plunged into the Ground, to prevent the Earth from drying too faſt; and in very dry Weather they ſhould be twice a Week refreſhed with Water, and kept clean from Weeds; if theſe Pots are in Autumn plunged again into an old Bed of Tan in a Frame, it will prevent the Plants being injured by Froſt, which, while they are very young, will frequently kill their upper Part, though when they are become more ligneous, they will reſiſt the greateſt Cold of our Winters; theſe Plants ſhould be planted out early in the Spring, before they ſhoot, into a Nurſery Bed, where they may grow a Year or two to get Strength, when they may be tranſplanted where they are to remain. If theſe Plants are planted in a moiſt light Soil, their Roots will extend to a conſiderable Diſtance, and put up many Shoots, which may be taken off in the Spring, and thereby may be increaſed; this will alſo take if grafted on the Pear, and if the young Branches are laid down, they will take Root, ſo they may be propagated either Way.

This is generally planted among flowering Shrubs of the ſame Growth, where it will add to the Variety.

CRATEVA. *Lin. Gen. Plant.* 528. *Tapia Plum. Nov. Gen.* 22. *Tab.* 21. Garlick Pear.

The *Characters* are,

The Empalement of the Flower is of one Leaf, cut at the Top into 4 oval Segments, which ſpread open. The Flower hath 4 oval Petals, which are narrow at their Baſe, and broad at the Top. It hath many briſtly Stamina, which are longer than the Petals, terminated by oblong erect Summits. It hath a long incurved Style, upon which ſits the oval Germen, crowned by the Stigma ſitting cloſe on the Top. The Germen becomes a large fleſhy globular Fruit with one Cell, including many Kidney-ſhaped Seeds.

The *Species* are,

1. Crateva *inermis. Flor. Zeyl.* 211. Smooth *Crateva*, or Garlick Pear. This is the *Tapia arborea triphylla. Plum. Nov. Gen.* 22. Three leaved *Tapia* Tree.

2. Crateva *ſpinoſa. Flor. Zeyl.* 212. Prickly *Crateva*. This is the *Cucurbitifera trifolia ſpinoſa medica, fructu pulpa Cydonii æmula. Pluk. Alm.* 125. Prickly three leaved Calabaſh Tree with a Pulp like a Quince.

The firſt Sort grows naturally in both *Indies*. I received the Fruit from *Jamaica*, where it grows in great Plenty. This Tree hath a very large Trunk, which riſes to the Height of 30 Feet or upward, covered with a dark green Bark, ſending out many Branches, ſo as to form a large Head. The Branches are garniſhed with trifoliate Leaves, ſtanding on pretty long Foot Stalks; the middle Leaf, which is much larger than either of the other, is oval, about five Inches long, and two and a Half broad in the Middle. The two Side Leaves are oblique, thoſe Sides which join the middle Leaf being much narrower than the other, and turn at both Ends toward the Middle, ſo that their Mid-rib is not parallel to the Sides; theſe two end in acute Points. The Leaves are ſmooth, of a light green on the upper Side, but pale on their under, their Edges are entire. The Flowers are produced at the Ends of the Branches, ſtanding upon long Foot Stalks; theſe have Empalements of one Leaf, cut into four Segments almoſt to the Bottom. The Flower hath 4 oblong Petals, which ſpread open, and are reflexed, having many long ſlender Stamina, connected at their Baſe, but ſpread open above, and terminated by oblong purple Summits; theſe ſurround a ſlender long Style, upon which is ſituated the oval Germen, which is crowned by an obtuſe Stigma. The Germen becomes a round Fruit, about the Size of an Orange, having a round brown Shell, or Cover, incloſing a meally Pulp, filled with Kidney-ſhaped Seeds. This Fruit hath a ſtrong Smell of Garlick, which is communicated to the Animals that feed on it.

This is propagated by Seeds, which muſt be procured from the Countries where the Trees grow naturally; theſe muſt be ſown on a hot Bed in Spring, and when the Plants come up, they muſt be treated in the ſame Manner as hath been directed for the *Anona*, to which Article the Reader is deſired to turn for the Culture.

The 2d Sort grows naturally in *India* to a very large Tree, with a large Trunk, ſending out many long Branches garniſhed with trifoliate Leaves, which are oblong, entire, and end in acute Points; between theſe the Branches are armed with long ſharp Thorns, which come out by Pairs, and ſpread aſunder. The Flowers are produced in ſmall Cluſters from the Side of the Branches, 5 or 7 ſtanding on a common branching Foot Stalk; theſe have 5 acute Petals, which are reflexed, and many Stamina which ſtand round a ſingle Style of the ſame Length; the Petals are green on the Outſide, and whitiſh within, and have a grateful Odour. After the Flower is paſt, the Germen ſwells to a large Fruit, the Size of an Orange, having a hard Shell, which incloſes a fleſhy viſcous Pulp, of a yellowiſh Colour, having many oblong plain Seeds within it; the Pulp of this Fruit hath an agreeable Flavour when ripe, ſo is frequently eaten in *India*, where they ſerve up the Fruit, mixed with Sugar and Orange, in their Deſerts, and is eſteemed a great Delicacy.

This Sort is propagated by Seeds, procured from the Places where it grows naturally; theſe muſt be ſown on a good hot Bed in Spring, and when the Plants are fit to remove, they ſhould be each tranſplanted into a ſmall Pot filled with light Kitchen Garden Earth, and plunged into a hot Bed of Tanners Bark, ſhading them every Day from the Sun, until they have taken freſh Root, after which they may be treated as the *Anona*, but ſparingly watered in Winter.

CREPIS. *Lin. Gen. Pl.* 819. *Hieracioides. Vaill. Act. R. Sc.* 1721. *Hieracium. Tourn.* Baſtard Hawkweed.

The *Characters* are,

It hath a Flower compoſed of many hermaphrodite Florets, included in a double Empalement; the outer is ſhort, ſpreading, and falls of, the inner is permanent, oval, and furrowed, having many narrow Scales, contracted together at the Top. The hermaphrodite Florets are of one Leaf; they are *uniform, Tongue-ſhaped, and indented at the Top in five Parts; theſe ſpread over each other like the Scales of Fiſh; theſe have each five ſhort hairy Stamina, terminated by cylindrical Summits. The Germen is ſituated in the Center of the Floret, ſupporting a ſlender Style, crowned by two reflexed Stigmas. The Germen afterward becomes an oblong Seed, crowned with a long feathery Down, which ſits upon little Foot Stalks.*

The *Species* are,

1. Crepis *foliis amplexicaulibus, lanceolatis, omnibus dentatis: Radicalibus ſinuatis. Vir. Cliff.* 79. *Crepis* with Spear-ſhaped Leaves embracing the Stalks, which are all indented, and the lower ones jaged. This is the *Hieracium dentis leonis folio, flore ſuave rubente. C. B. P.* Hawkweed with a Dandelion Leaf, and ſoft red Flower.

2. Crepis *foliis pinnatis angulatis, petiolatis, dentatis. Prod. Leyd.* 126. *Crepis* with angular indented winged Leaves having Foot Stalks. *Hieracium foliis Cichorei ſylveſtris villoſis, odore Caſtorei: Bot. Monſp.* Hawkweed with hairy wild Succory Leaves, ſmelling like Caſtor.

3. Crepis *involucris calyce longioribus incurvatis, foliis lanceolatis dentatis.* *Crepis* with an incurved Involucrum longer than the Empalement, and Spear-ſhaped indented Leaves. This is the *Hieracium medio-nigrum. Bœticum majus. Par. Bat.* 185. Greater *Spaniſh* Hawkweed with Flowers black in the Middle.

4. Crepis *foliis amplexicaulibus, oblongis, acuminatis inferioribus ſupernè, ſummis infernè, denticulatis. Hort. Up. Crepis* with oblong, pointed Leaves embracing the Stalk, the lower being indented upward; and the upper downward. *Hieracium Alpinum Scorzoneræ folio. Tourn. Alpine* Hawkweed with a Viper's Graſs Leaf.

There are ſeveral other Species of this Genus, ſome of which grow naturally in *England*, and others are Weeds in divers Parts of *Europe*, ſo are rarely admitted into Gardens, therefore I ſhall not enumerate them here.

The 1ſt Sort grows naturally in *Apulia*, but is now cultivated in *Engliſh* Gardens for Ornament; it is an annual, and periſhes after it hath ripened Seeds. This hath many Spear-ſhaped Leaves which ſpread on the Ground, theſe are deeply jaged on their Sides; between them ariſe the branching Stalks, which grow a Foot and Half high, dividing into many Branches, garniſhed with oblong Leaves deeply indented on their Edges, embracing the Stalks with their Baſe; the Stalks are each terminated by one large radiated Flower, of a ſoft, red Colour, compoſed of many half Florets ſucceeded by oblong Seeds crowned with a feathery Down. It flowers in *June* and *July* and the Seeds ripen in Autumn. This Plant, when bruiſed, emits an Odour like bitter Almonds.

The Seeds ſhould be ſown in Spring on the Borders of the Flower Garden where they are deſigned to remain, ſo that if 6 or 8 Seeds are ſown in each Patch, when the Plants come up, they may be reduced to 3 or 4; and if theſe are kept clean from Weeds, they will require no other Culture, except putting ſmall Sticks down to faſten the Stalks, to prevent their being broken by Winds, or loaded by Rain. If the Seeds are ſown in Autumn, or permitted to ſcatter, the Plants will come up, and live through the Winter without Shelter, and theſe will flower early in Spring.

The 2d Sort grows naturally in the South of *France* and in *Italy*. This is a biennial Plant, and ſometimes, when it is in poor Ground, will continue longer; this hath a thick tap Root which ſtrikes deep into the Ground, ſending out many ſmall Fibres, the lower Leaves are from 4 to 5 Inches long, and about a Quarter of an Inch broad, having ſeveral deep Jags on their Edges, the Segments ending in acute Points; from the ſame Root ariſes 4 or 5 Stalks, which grow about 9 or 10 Inches high, the lower Part of theſe are garniſhed with Leaves of the ſame Form with thoſe near the Root, but are ſmaller, and more jaged, the upper Part of the Stalks are naked, and branch out into two, and ſometimes three Branches, each being terminated by one Flower of a Gold Colour, inclining to Copper, compoſed of many Florets included in a ſingle Empalement; the Flowers are ſucceeded by oblong narrow Seeds, crowned with a feathery Down: The whole Plant, when bruiſed, emits a ſtrong Odour of Caſtor. It flowers in *June*, and the Seeds ripen in Autumn. This is frequently preſerved in Gardens for Variety.

It is propagated by Seeds as the firſt Sort, but as this continues longer, the Seeds need not be annually ſown. The Plants require no other Culture but to keep them clean from Weeds, and if the Seeds are permitted to ſcatter, the Plants will come up without any Trouble, ſo need only be thinned where they are too cloſe.

The 3d Sort is an annual Plant, which grows naturally in *Spain*, but is now frequently propagated in Flower Gardens for Ornament. This puts out Leaves near the Root, which are 9 Inches long, and almoſt 2 broad in the Middle, theſe are of a light green, and a little jaged on their Edges; the Stalks riſe a Foot and a Half high, dividing into many Branches, garniſhed with Leaves of the ſame Form as thoſe at Bottom, but are ſmaller and ſit cloſe to the Branches; the Flowers are produced at the End of the Branches, theſe have a double Empalement, compoſed of many long, very narrow Leaves; the out Series are reflected downward, and turn upward again, and are inflexed at their Extremities. The Flowers are compoſed of many Florets, which are ſtretched out on one Side at the Top like a Tongue, theſe are cut at their Extremities into 4 or 5 Parts; they ſpread regularly in Form of Rays, and are ſituated over each other like Scales of Fiſh; there are two Varieties of this, one with a deep yellow, and the other of a Sulphur Colour inclining to white, but both have a dark black Bottom or Middle, ſo make a pretty Appearance in a Garden. It flowers in *June* and *July*, and the Seeds ripen in Autumn. This Plant requires the ſame Culture as the firſt, and is equally hardy, ſo that where the Seeds are permitted to ſcatter, the Plants will come up without Care.

The 4th Sort grows naturally on the *Alps*, this is alſo an annual Plant, which ſends out many oblong pointed Leaves near the Root, which are five Inches long, and almoſt two broad at their Baſe, leſſening gradually to a Point, the upper Part of theſe are ſlightly indented, but their lower Parts are entire; the Stalks are ſtrong, upright, riſing a Foot and a Half high, dividing into 3 or 4 Branches, which grow erect, and are terminated by pale, white Flowers, incloſed in a ſtrong hairy Empalement; which contracts cloſe toward the Top, the Stalks are garniſhed with Leaves of the ſame Form as the lower, which embrace the Stalks with their Baſe, where they are ſlightly indented, but their upper Parts are entire; theſe Leaves are hairy and rough. It flowers in *June*, and the Seeds ripen in Autumn. This requires the ſame Culture as the firſt, and the Seeds will ſcatter about the Garden, ſo that if the Plants are not deſtroyed, they will maintain themſelves without any Care.

CRESCENTIA. *Lin. Gen. Plant.* 680. *Cujete. Plum. Nov. Gen.* 23. *Tab.* 16. Calabaſh Tree.

The *Characters* are,

The Flower hath one Petal, which is irregular, having a curved gibbous Tube, whoſe Brim is cut into 5 unequal Segments, which are reflexed; this hath an Empalement, which is ſhort, of one Leaf and cut into 2 obtuſe Segments, which are concave. It hath 4 Stamina, 2 of which are of the Length of the Petal, the other are ſhorter, terminated by twin Summits which are proſtrate. It hath an oval Germen ſitting on a Foot Stalk, ſupporting a long ſlender Style, crowned by a roundiſh Stigma. The Germen afterward becomes an oval or Bottle ſhaped Fruit, with a hard Shell incloſing many flat Heart-ſhaped Seeds.

The *Species* are,

1. CRESCENTIA *foliis lanceolatis, utrinque attenuatis. Hort. Cliff.* 327. *Creſcentia* with Spear-ſhaped Leaves, narrowed at both Ends. This is the *Cujete foliis oblongis anguſtis magno fructu ovato. Plum. N. G.* Calabaſh Tree with oblong narrow Leaves, and large oval Fruit.

2. CRESCENTIA *foliis oblongo-ovatis, fructu rotundo, cortice fragili. Creſcentia* with oblong, oval Leaves, and a round Fruit with a tender Shell.

There are ſome Varieties of theſe Trees, which only differ in the Size and Shape of their Fruit, but thoſe are Variations which ariſe from Seeds of the ſame Tree, ſo are not to be enumerated as diſtinct Species, but the two here mentioned are undoubtedly different Species, for I have frequently raiſed them from Seeds, and have never found either of them vary.

The 1ſt Sort grows naturally in *Jamaica* and the *Leeward Iſlands*. This hath a thick Trunk, covered with a whitiſh Bark, which riſes from 20 to 30 Feet high, having ſeveral Knots all the Length, and at the Top divides into many Branches, which ſpread out every Way, and form a large regular Head; theſe are garniſhed with Leaves which come out irregularly, ſometimes ſingle, and at others many ariſe from the ſame Knot; they are near 6 Inches long, and one and a Half broad in the Middle, diminiſhing gradually to both Ends; they are of a lucid green, and have very ſhort Foot Stalks, with one Mid-rib, and ſeveral tranſverſe Veins running from that to the Sides. The Flowers are produced from the Side of the large Branches, and ſometimes from the Trunk, ſtanding on long Foot Stalks, their Empalement is deeply divided into two obtuſe Segments. The Flower hath but one Petal, which is irregular, having an incurved Tube, which is divided at the Brim into 2 irregular Segments, which turn backward; theſe are of a greeniſh yellow Colour, ſtriped and ſpotted with brown; the Flowers are an Inch and a Half long, from the Bottom of the Tube to the Extent of the upper Segment. They have 4 ſlender Stamina, of the ſame Colour with the Petal, which are of unequal Lengths, two being full as long as the Petal, and the other are much ſhorter; they are terminated by oblong Summits, divided in the Middle which lie proſtrate on the Stamina. From the lower Part of the Tube ariſes a long, ſlender Foot Stalk, ſupporting the oval Germen, which hath a headed Stigma ſitting cloſe on the Top, the Germen afterward turns to a large Fruit, of different Forms and Size; they are often ſpherical, ſometimes they are oval, and at other Times they have a contracted Neck like a Bottle, and are ſo large, as when the Pulp and Seeds are cleaned out, the Shells will contain 3 Pints or 2 Quarts of Liquid. Theſe Shells, are covered with a thin Skin of a greeniſh yellow when ripe, which is peeled off; and under this is a hard ligneous Shell, incloſing a pale yellowiſh ſoft Pulp, of a tart unſavory Flavour, ſurrounding a great Number of flat Heart-ſhaped Seeds.

The Shells of this Fruit are cleaned of their Pulp, and the outer Skin taken off by the Inhabitants of the Iſlands, and when dried, they uſe them for drinking Cups, ſome of which are tipped with Silver, and to the Necks they faſten Handles, and ſome of the long ſmall Fruit are formed into the Shape of Spoons or Ladles; the round ones are cut through the Middle, and uſed as Cups for Chocolate. The *Indians* put a Number of ſmall Stones into them when cleared of the Pulp, to make a Sort of Rattle: In ſhort, they convert theſe Shells into many Sorts of Furniture, which is the principal Uſe made of the Fruit, for the Pulp is ſeldom eaten, except by Cattle in the Time of great Droughts. The Leaves and Branches are alſo eaten by the Cattle in Times of Scarcity. The Wood of this Tree is hard and ſmooth, ſo is frequently uſed for making Saddles, Stools and other Furniture.

The 2d Sort ſeldom riſes more than 15 or 20 Feet high; this hath an upright Trunk, covered with a white ſmooth Bark; ſending out many lateral Branches at the Top, garniſhed with oblong Leaves, 3 Inches in Length, and one and a Quarter broad; theſe are ranged alternately on the Branches, ſitting upon ſhort Foot Stalks, they are of a deeper green than thoſe of the 1ſt Sort, and their Edges are entire. The Flowers come out from the Side of the large Branches and the Trunk; theſe are ſmaller, and of a deeper yellow Colour than thoſe of the firſt; the Fruit of this is ſometimes round, at others oval, ſome being much larger than the other; the Shells are thin and very brittle, ſo are unfit for any Purpoſes to which thoſe of the former are employed; the Seeds are alſo much thinner, and the Pulp is of a deeper yellow. The Wood is hard, and very white, ſo might be uſeful, were it not for the Plenty of other Sorts, which abound in many of the Iſlands. This was found growing naturally in Plenty at *Campeachy* by Dr. *Houſtoun*, who ſent the Fruit to *England*.

Theſe Trees are too tender to live abroad in *England*, ſo require a warm Stove to be preſerved here. They are eaſily propagated by Seeds, which muſt be procured from the Countries where they grow naturally; the Way is to have the entire Fruit ſent over when fully ripe; for when the Seeds are taken out of the Pulp Abroad, and ſent over hither, if they are long in their Paſſage, they will looſe their growing Quality before they arrive, as I have often experienced. Theſe Seeds muſt be ſown on a good hot Bed in Spring, and when the Plants are fit to remove, they ſhould be each planted into a ſmall Halfpenny Pot filled with light ſandy Earth, and plunged into a hot Bed of Tanners Bark, obſerving to ſhade them from the Sun till they have taken freſh Root, when they muſt be treated as other tender Plants which are Natives of the ſame Countries. In Winter they muſt be placed in the Tan Bed of the Bark Stove, and during that Seaſon ſhould have but little Water; in Summer they will require to be gently watered 2 or 3 Times a Week, according to the Warmth of the Seaſon; and in hot Weather, they ſhould have a large Share of Air admitted to them. With this Management they will make great Progreſs, and their Leaves being of a fine green, the Plants make a pretty Variety in the Stove, but they have not as yet flowered in *England*.

CRESS the Garden. *See* Naſturtium.

CRESS the *Indian*. *See* Tropæolum.

CRESS the Water, and the Winter. *See* Siſymbrium.

CRINUM. *Lin. Gen. Plant.* 366. *Lilio-Aſphodelus. Com. Rar.* 14. *Dillen. Hort. Elth.* 194. Aſphodel Lilly.

The *Characters* are,

The Involucrum is compoſed of 2 *oblong Leaves in Form of a Sheath or Cover, which dries and is reflexed. The Flower hath one Petal, which is Funnel-ſhaped, having a long Tube, deeply cut at the Top into* 6 *Parts which are reflexed. It hath* 6 *long Stamina, inſerted in the Tube of the Petal, and ſtretched out beyond the Petals, ſpreading open; theſe are terminated by oblong proſtrate Summits, riſing at one End; the Germen is ſituated in the Bottom of the Flower, ſupporting a long ſlender Style crowned by a ſmall trifid Stigma. The Germen afterward becomes an oval Capſule with* 3 *Cells, each containing one or two oval Seeds.*

The *Species* are,

1. Crinum *foliis ſublanceolatis planis, corollis obtuſis. Lin. Sp. Pl.* 292. *Crinum* with plain Spear-ſhaped Leaves, and obtuſe Petals. This is the *Hyacinthus Africanus tuberoſus, flore cæruleo umbellato. Hort. Amſt. African* tuberous Hyacinth with a blue umbellated Flower.

2. Crinum *foliis carinatis. Flor. Zeyl.* 127. *Crinum* with Keel-ſhaped Leaves. This is the *Lilium Zeylanicum, bulbiferum & umbelliferum. H. L.* 682. *Ceylon* Lilly with umbellated Flowers, bearing Bulbs.

3. Crinum *corollarum apicibus introrſum unguiculatis. Lin. Sp. Pl.* 292. *Crinum* with the Tops of the Petals formed on the Inſide like the Nails of a Finger. This is the *Lilio-aſphodelus Americanus ſempervirens, maximus, polyanthus, albus. Com. rar. Pl.* Largeſt ever-green *American Aſphodel* Lilly having many white Flowers.

4. Crinum *foliis carinatis, baſi anguſtioribus, floribus profundè diſſectis. Crinum* with Keel-ſhaped Leaves narrower at their Baſe, and Flowers deeply cut.

The 1ſt Sort grows naturally at the *Cape of Good Hope*, from whence it was brought to the Gardens in *Holland*, and ſince been ſpread into moſt of the curious Gardens in *Europe*. The Root is compoſed of many thick fleſhy Fibres diverging from the ſame Head, which ſtrike deep into the Ground, and put out many ſmaller Fibres, which are white and fleſhy; from the ſame Head ariſes a Cluſter of Leaves ſurrounding each other with their Baſe, ſo as to form a Kind of herbaceous Stalk, about 3 Inches high, from which the Leaves ſpread only two ways, appearing flat the other two. The Flower Stalk ariſes by the Side of theſe Leaves, which is round, hollow, and riſes upward of 2 Feet high, being terminated by a large Head of Flowers, included in a Kind of Sheath, which ſplits into two Parts, and is reflexed. The Flowers ſtand each upon a Foot Stalk about one Inch long; the Flowers are tubulous, have but one Petal, which is cut, almoſt to the Bottom, into ſix oblong, blunt Segments, waved on their Edges; in the Center is an oval 3 cornered Germen, ſupporting a long Style, attended by 6 Stamina, 2 of the ſame Length, 2 ſomewhat ſhorter, and the 2 which reſt upon the lower Segments are the ſhorteſt. The Flowers are of a bright blue Colour, and grow in large Bunches, ſo make a fine Appearance. They begin to flower in *September*, and frequently continue in Beauty till *March*, which renders them more valuable.

This Plant is propagated by Offsets which come out from the Side of the Plants, theſe may be taken off the latter End of *June*, at which Time theſe Plants are in their greateſt State of reſt; when the Plants ſhould be turned out of the Pots, and the Earth carefully cleared away from the Roots, that the Fibres of the Offsets may be better diſtinguiſhed; then the Fibres of the Offſets ſhould be ſeparated from thoſe of the old Roots, and the Offsets may with the Hands be ſeparated, being careful not to break their Heads. But where they adhere ſo cloſely to the old Plant, as not to be ſo ſeparated, they muſt be cut off with a Knife, taking great Care not to wound or break the Roots of either the Offsets or the Parent Plant. When theſe are parted, they ſhould be planted, each into a ſeparate Pot, filled with light Kitchen Garden Earth, and placed in a ſhady Situation, where they may enjoy the Morning Sun, giving them a little Water twice a Week, if the Weather proves dry, but they muſt not have too much Wet at this Seaſon, when they are almoſt inactive, for as the Roots are fleſhy and ſucculent, they are apt to rot with great Moiſture. In about five Weeks the Offsets will have put out new Roots, when the Pots may be removed to a more ſunny Situation, and then they may have a little more Water which will ſtrengthen their flowering; but it muſt not be given too liberally for the Reaſons before given. In *September* they will put out their Flower Stalks, and toward the End of that Month, the Flowers will begin to open, when, if the Weather ſhould not be good, they ſhould be removed under Shelter, to prevent the Flowers from being injured by Froſt or too much Wet; but they ſhould have as much free Air as poſſible, otherwiſe the Flowers will be pale coloured and weak. Toward the End of *October*, they ſhould be removed into the Green-houſe, and placed where they may enjoy as much free Air as poſſible, and not be over-hung by other Plants; and during the Winter, they may have a little Water once a Week or oftener in mild Weather, but in Froſt they ſhould be kept dry. This Plant only requires Protection from Froſt and Moiſture, ſo ſhould not have any artificial Warmth in Winter, and muſt be placed in the open Air in Summer.

The 2d Sort hath large bulbous Roots, which ſend out many large fleſhy Fibres which have Bulbs formed at their Ends, the Leaves are near 3 Feet long, hollow on their upper Side, and cloſely fold over each other at their Baſe, ſpreading out on every Side, and the outer Leaves generally turn downward at the Top; they are of a deep green and are obtuſe at their Points. The

Flower Stalk ariſes on one Side the Leaves, which is thick, ſucculent, hollow in the Middle, and a little compreſſed on two Sides, this grows two Feet high or more, and is of the ſame Colour with the Leaves; theſe are terminated by large Umbels of Flowers, which hath a Sort of Sheath or Cover, with ſplits Length-ways, and is reflexed back to the Stalk, where it dries and remains; the Flowers have Tubes near 4 Inches long, which are narrow, and the upper Part deeply cut into 6 long Segments reflexed back almoſt to the Tube; in the Center ariſes the Style, attended by 6 long Stamina, which ſtand out beyond the Petal, and are terminated by oblong proſtrate Summits of a yellow Colour. After the Flowers are paſt, the Germen at the Bottom of the Tube, becomes a large roundiſh 3 cornered Capſule, having 3 Cells, 2 of which are generally abortive, and the 3d hath 1 or 2 irregular Bulbs, which if planted produce young Plants.

The 3d Sort hath broader Leaves than the 2d, they are plain and not hollowed on their upper Side, but ſhorter and of a lighter green; theſe embrace each other at their Baſe; by the Side of theſe ariſes the Flower Stalk, which is compreſſed and hollow riſing about 2 Feet high, and terminated by large Umbels of white Flowers, like thoſe of the former Sort, but the Segments of the Petal are broader and not ſo much reflexed.

The 4th Sort hath Roots like thoſe of the 2d; the Leaves are narrower at their Baſe, and ſtained with purple on their under Side; the Flower Stalks are purple, and grow to the ſame Height as thoſe of the 2d; the Flowers are in Shape like them, but the Tube is purple, and the Segments have a purple Stripe running through them; the Stamina alſo are purple, which renders this more beautiful than the other Sorts; theſe Differences are conſtant in all the Plants which riſe from Seeds, ſo there can be no Doubt of its being a diſtinct Sort.

Theſe 3 Sorts grow naturally in both *Indies*, ſo are very tender, and muſt be kept in a warm Stove, otherwiſe they will not thrive in *England*; they are eaſily propagated by Offsets, which the Roots put out in Plenty, or by the Bulbs which ſucceed the Flowers, and ripen perfectly here. Theſe muſt be planted in Pots filled with rich Earth, and plunged into the Tan Bed in the Stove, the Plants will make greater Progreſs and flower oftener, than when they are placed on Shelves; though in the latter way they will ſucceed very well, if kept in a good Temperature of Heat. The Roots ſhould be tranſplanted in Spring, and all the Offsets taken off, otherwiſe they will fill the Pots and ſtarve the old Plants: They muſt be frequently refreſhed with Water, but it muſt not be given too plentifully, eſpecially in Winter. Theſe Sorts flower at every Seaſon of the Year, which renders them very valuable, for where there are many Plants, there will be almoſt a perpetual Succeſſion of Flowers, which emit a very agreeable Odour.

CRITHMUM. *Lin. Gen. Plant.* 303. *Tourn. Inſt. R. H.* 317. *Tab.* 169. Samphire. In *French Bacille.*

The *Characters* are,

It is a Plant with an umbelliferous Flower, the great Umbel is hemiſpherical and compoſed of many ſmaller of the ſame Figure; the Involucrum of the general Umbel is compoſed of ſeveral Spear-ſhaped Leaves; thoſe of the particular Umbels have very narrow Leaves the Length of the Umbel; the general Umbel is uniform, the Flowers have 5 *oval inflexed Petals almoſt equal; they have* 5 *Stamina the Length of the Petals, terminated by roundiſh Summits. The Germen is ſituated under the Flower, ſupporting* 2 *reflexed Styles crowned by obtuſe Stigmas; the Germen becomes an oval compreſſed Fruit, dividing into* 2 *Parts, each having one compreſſed, elliptical, furrowed Seed.*

The *Species* are,

1. Crithmum *ſive Fœniculum maritimum minus. C. B. P.* 288. Samphire, or ſmaller Sea Fennel.

2. Crithmum *foliolis lateralibus bis trifidis. Hort. Cliff.* 98. Samphire whoſe ſmaller Leaves on their Sides are doubly trifid. This is the *Apium Pyrenaicum thapſiæ facie. Tourn. Inſt.* 305. *Pyrenean* Parſley with the Appearance of ſcorching Carrot.

The 1ſt Sort grows on the Rocks by the Sea Side, in many Parts of *England*. This hath a Root compoſed of many ſtrong Fibres, which penetrate deep into the Crevices of the Rocks, ſending up ſeveral fleſhy ſucculent Stalks, which riſe about 2 Feet high, theſe are garniſhed with winged Leaves, which are compoſed of 3 or 5 Diviſions, each of which hath 3 or 5 ſmall thick ſucculent Leaves near half an Inch long; the Foot Stalks of the Leaves embrace the Stalks at their Baſe. The Flowers are produced in circular Umbels at the Top of the Stalks, theſe are of a yellow Colour, and are compoſed of 5 Petals, which are near equal in Size, and ſomewhat like thoſe of Fennel, but are larger. This Herb is pickled and eſteemed very comfortable to the Stomach, and is very agreeable to the Palate, it provokes Urine gently, removes the Obſtructions of the Viſcera, and creates an Appetite, it is commonly uſed for Sauce; it is gathered on the Rocks where it grows naturally, but the People who ſupply the Markets with it, ſeldom bring the right Herb, but inſtead of it they bring a Species of *Aſter*, which is called golden Samphire, but hath a very different Flavour from the true, nor has it any of its Virtues. This grows in greater Plenty and on the plain Ground overflowed by Salt Water, whereas the true Samphire grows out of the Crevices of perpendicular Rocks, where it is very difficult to come at; it flowers in *July*, and the Seeds ripen in Autumn.

This Plant is with Difficulty preſerved in Gardens, nor will it grow ſo vigorous as it does on Rocks, but if planted on a moiſt gravelly Soil, it will thrive tolerably well, and may be preſerved ſome Years; it may be propagated by Seeds or parting the Roots.

The 2d Sort is by *Tournefort* ranged in his Genus of *Apium*. This grows naturally on the *Pyrenean* Mountains; it is a biennial Plant, which doth not flower till the 2d Year, and periſhes ſoon after the Seeds are ripe. There are 2 or 3 Sorts of this Plant, which differ in their outer Appearance, but I am not certain of their being diſtinct Species; one of theſe is titled by Mr. *Ray*, *Apium montanum ſive petræum album.* This is of humbler Growth than the other; the ſmall Leaves are broader, not ſo much cut on their Edges, and of a paler green: They are preſerved in a few Gardens for Variety. They are propagated by Seeds, which ſhould be ſown where they are deſigned to remain, and require no Culture but to keep them clean from Weeds, and thin them where too cloſe.

CRISTA GALLI. *See* Pedicularis.

CRISTA PAVONIS. *See* Poinciana.

CROCUS. *Lin. Gen. Plant.* 53. *Tourn. Inſt. R. H.* 350. *Tab.* 183. 184. Saffron.

The *Characters* are,

It hath a Spatha or Sheath of one Leaf; the Flower hath one Petal which is deeply cut into ſix oblong Segments which are equal; it hath 3 Stamina, which are ſhorter than the Petal terminated by Arrow-pointed Summits. The roundiſh Germen is ſituated at the Bottom of the Tube, ſupporting a ſlender Style, crowned by 3 twiſted Stigmas which are ſawed, the Germen afterward becomes a roundiſh Fruit with 3 Cells, filled with roundiſh Seeds.

The *Species* are,

1. Crocus *Spathâ univalvi radicali, corollæ tubo longiſſimo. Lin. Sp. Pl* 36. Saffron with a Spatha near the Root having one Valve, and a long Tube to the Flower. *Crocus ſativus. C. B. P.* Cultivated Saffron.

2. Crocus *Spathâ univalvi pedunculato, corollæ tubo breviſſimo.* Saffron with a Spatha on the Foot Stalk having one Valve, and a very ſhort Tube to the Flower. This is the *Crocus juncifolius autumnalis, flore magno purpuraſcente. Boerh. Ind. alt.* 2. 120. Ruſh leaved autumnal Crocus with a large purpliſh Flower.

3. Crocus *Spathâ bivalvi radicali, floribus ſeſſilibus. Crocus* with a bivalve Spatha near the Root, and Flowers ſitting cloſe to the Ground. This is the *Crocus vernus latifolius, flavo flore varius. C. B. P.* 66. Broad leaved Spring Crocus with a variable yellow Flower, commonly called Biſhop's Crocus.

4. Crocus *Spathâ biflorâ corollæ tubo tenuiſſimo. Crocus* with two Flowers in each Spatha, having very narrow Tubes. This is the *Crocus vernus, ſtriatus, vulgaris. Par. Par.* Common, Spring, ſtriped Crocus.

There are great Varieties of theſe Flowers; but as moſt, if not all of them are only ſeminal Variations, I thought it needleſs to particulariſe them here, eſpecially as there are frequently new Varieties obtained from Seeds. Thoſe here enumerated, muſt be allowed to be ſpecifically different, ſince they have many diſtinguiſhing Characters, ſufficient to determine the ſpecifick Difference in Plants.

The 1ſt Sort is the Plant which produces the Saffron, a well known Drug. This hath a round bulbous Root, as large as a ſmall Nutmeg, a little compreſſed at the Bottom, and covered with a coarſe, brown netted Skin; from the Bottom of this Bulb, is ſent out many long Fibres, which ſtrike pretty deep into the Ground; from the upper Part of the Root come out the Flowers, which together with the young Leaves whoſe Tops juſt appear, are cloſely wrapped about by a thin Spatha or Sheath, which part within the Ground, and opens on one Side. The Tube of the Flower is very long, ariſing immediately from the Bulb, without any Foot Stalk, and at the Top is divided into ſix oval, obtuſe Segments which are equal, and of a purple blue Colour. In the Bottom of the Tube is ſituated a roundiſh Germen ſupporting a ſlender Style, not more than half the Length of the Petal, crowned with 3 oblong golden Stigmas (which is the Saffron) theſe ſpread aſunder each Way: The Style is attended by 3 Stamina, whoſe Baſe are inſerted in the Tube of the Petal, and riſe to the Height of the Style, where they are terminated by Arrow-pointed Summits. This Plant flowers in *October*, and the Leaves grow all the Winter, but it never produces any Seeds here.

The 2d Sort grows naturally on the *Alps* and *Helvetian* Mountains, this hath a ſmaller bulbous Root than the 1ſt, and is more compreſſed, the Flowers appear about the ſame Seaſon, but they riſe with a ſhort Foot Stalk, having a ſhort Spatha or Sheath juſt below the Flower, which covers it before it expands. The Tube of the Flower is very ſhort, the Petal being divided almoſt to the Bottom; and the Segments terminate in acute Points; the Stamina and Style are ſhort, and the Leaves of the Plant are very narrow. The Flower is of a deep blue; but there is a Variety of this with a Sky blue Flower; which is ſuppoſed to have been produced by Seeds.

The 3d Sort hath a pretty large compreſſed bulbous Root, covered with a light brown netted Skin, from which ariſe 4 or 5 Leaves, like thoſe of the other Vernal Crocuſes, of a purpliſh dark Colour on their lower Parts; from between theſe come out one or two Flowers of a deep yellow Colour, ſitting cloſe between the young Leaves, never riſing above 2 Inches high, theſe have an agreeable Odour; the outer Segments of the Petal are marked with 3 black Streaks or Stripes running lengthways from the Bottom to the Top of the Segment; theſe are narrower than the inner Segments. From the double Arrangement of theſe Segments, ſome have called it a double Flower. Theſe Segments have dark purple Bottoms, and the Tube of the Flower hath as many purple Stripes as there are Segments in the Petal. Out of the Center of the Tube ariſes a ſlender Style, crowned by a golden Stigma, which is broad and flat, and is attended by 3 ſlender Stamina of the ſame Length, terminated by yellow Summits; after the Flower is paſt, the Germen puſhes out of the Ground, and ſwells to a roundiſh 3 cornered Seed Veſſel, which opens in 3 Parts filled with roundiſh brown Seeds. This is one of the earlieſt Spring Crocuſes.

The 4th Sort riſes with a few very narrow Leaves, which are, together with the Flower Buds, cloſely wrapped round by a Spatha or Sheath, out of which ariſe 2 Flowers, one of which hath a longer Tube than the other, but theſe are very ſlender, and do not riſe much above the Spatha; there the Petal enlarges, and is divided into 6 obtuſe Segments, of equal Size, they are of a dirty white on their Outſide with 3 or 4 purple Stripes in each, the Inſide of the Petal is of a purer white; the Stamina and Style are nearly the ſame as thoſe of the former Sort. This is one of the earlieſt Sorts.

The Varieties of the autumnal Crocus are,

1. The ſweet ſmelling autumnal Crocus, whoſe Flowers come before the Leaves. *C. B.* This is our 2d Sort.

2. The autumnal Mountain Crocus. *C. B.* This hath a paler blue Flower.

3. The many flowering bluiſh autumnal Crocus. *C. B.* This hath many Sky blue Flowers.

4. The ſmall flowering autumnal Crocus. *C. B.* This hath a ſmall deep blue Flower.

The Varieties of the Spring Crocus are,

1. Broad leaved purple variegated Spring Crocus. *C. B.* This hath broad Leaves and a deep blue Flower ſtriped.

2. Broad leaved Crocus of the Spring with a purple Flower. *C. B.* This hath a plain purple Flower.

3. Broad leaved Spring Crocus with a violet coloured Flower. *C. B.* This hath a large deep blue Flower.

4. Spring Crocus, with a white Flower and a purple Bottom. *C. B.*

5. Broad leaved white variegated Spring Crocus.

6. Broad leaved Spring Crocus with many purple violet Flowers ſtriped with white. *C. B.*

7. Broad leaved Spring Crocus of an Aſh-colour.

8. Broad leaved Spring Crocus with a large yellow Flower. *C. B.*

9. Broad leaved Spring Crocus with a ſmaller and paler yellow Flower. *C. B.*

10. Broad leaved Spring Crocus with ſmaller yellow Flowers ſtriped with black.

11. Narrow leaved Spring Crocus with a ſmaller Brimſtone coloured Flower.

12. Narrow leaved Spring Crocus with a ſmall white Flower.

Theſe are the principal Varieties which I have obſerved in the *Engliſh* Gardens, but there are many more mentioned in the foreign Catalogues, many of which are ſo nearly alike, as ſcarce to be diſtinguiſhed; and if the Seeds were ſown, there might be a greater Variety obtained; but as they propagate very faſt by Offſets, the Seeds rarely are ſown here.

All theſe ſeveral Varieties of Crocuſes are very hardy, and will increaſe exceedingly by their Roots, eſpecially if they are ſuffered to remain 2 or 3 Years unremoved; they will grow in almoſt any Soil or Situation, and are very great Ornaments to a Garden early in the Spring, before many other Flowers appear. They are commonly planted near the Edges of Borders on the Sides of Walks; in doing which, you ſhould be careful to plant ſuch Sorts in the ſame Line as flower at the ſame Time, and are of equal Growth, otherwiſe the Lines will ſeem imperfect. Theſe Roots, loſing their Fibres with their Leaves, may then be taken up, and kept dry until the Beginning of *September*, obſerving to keep them from Vermin; for the Mice are very fond of them. When you plant theſe Roots (after having drawn a Line upon the Border,) make Holes with a Dibble about 2 Inches deep or more, according to the Lightneſs of the Soil, and two Inches Diſtance from each other, in which you muſt place the Roots with the Bud uppermoſt; then with a Rake fill up the Holes that the upper Part of the Root may be covered an Inch or more, being careful not to leave any of the Holes open; for this will entice the Mice to them, which, when once they have found out, will deſtroy all your Roots, if they are not prevented.

Theſe Flowers are commonly diſpoſed this Way in Gardens; but the better Way is to plant 6 or 8 near each other in Clumps, between ſmall Shrubs or on the Borders of the Flower Garden; where if the Varieties are planted in different Patches, and properly intermixed, they will make a much better Appearance than when diſpoſed in the old Method of ſtrait Edgings.

In *January*, if the Weather is mild, the Bud will ſhow above Ground; and in *February* their Flowers appear, before the green Leaves are grown to any Length, ſo that the Flower ſeems at firſt to be naked; but ſoon after the Flowers decay, the green Leaves grow 6 or 8 Inches long, which ſhould not be cut off until they decay, notwithſtanding they appear a little unſightly; for by cutting off the Leaves, the Root will be ſo weakened as not to arrive at half their uſual Bigneſs, nor will their Flowers the ſucceeding Year be half ſo big: Their Seeds are commonly ripe about the Beginning of *May*, when the green Leaves begin to decay.

The Autumnal Crocuſes are not ſo great Increaſers as are thoſe of the Spring, nor do they produce Seeds in our Climate, ſo are leſs common in Gardens, except the true Saffron, which is propagated for Uſe in great Plenty in many Parts of *England*; theſe may be taken up every third Year, as directed for the Spring Crocuſes, but ſhould not be kept out of the Ground longer than the Beginning of *Auguſt*; for they commonly produce their Flowers in *September*, or the Beginning of *October*; ſo that if they remain too long out of the Ground, they will not produce their Flowers ſo ſtrong, nor in ſuch Plenty, as when they are planted early.

The Method of cultivating Saffron being ſomewhat curious, I ſhall here inſert an Abſtract of it, as preſented to the Royal Society by Dr. *James Douglaſs*.

As Saffron grows at preſent moſt plentifully in *Cambridgeſhire*, and has grown formerly in ſeveral other Counties of *England*, the Method of Culture does not, I believe, vary much in any of them; and therefore I judge it ſufficient to ſet down here the Obſervations which I employed proper Perſons, in different Seaſons, to make, in the Years 1723, 1724, 1725, and 1728, up and down all that large Tract of Ground that lies between *Saffron-Walden* and *Cambridge*, in a Circle about ten Miles Diameter.

In that County Saffron has been cultivated; and therefore it may reaſonably be expected, that the Inhabitants thereof are more thoroughly acquainted with it than they are any where elſe.

I ſhall begin with the Choice and Preparation of the Ground; the greateſt Part of the Tract already mentioned is an open level Country, with few Incloſures; and the Cuſtom there is, as in moſt other Places, to crop two Years, and let the Land be fallow the third. Saffron is always planted upon fallow Ground; and, all other Things being alike, they prefer that which has borne Barley the Year before.

The Saffron Grounds are ſeldom above three Acres, or leſs than one; and in chooſing, the principal Thing they have regard to, is, that they be well expoſed, the Soil not poor, nor a very ſtiff Clay, but a temperate dry Mould, ſuch as commonly lies upon Chalk, and is of an Hazel Colour; though if every Thing elſe anſwers, the Colour of the Mould is not material.

The Ground being made Choice of, about *Lady-Day*, or the Beginning of *April*, it muſt be carefully ploughed, the Furrows being drawn much cloſer together, and deeper, if the Soil will allow it, than is done for any Kind of Corn; and accordingly, the Charge is greater.

About five Weeks after, during any Time in the Month of *May*, they lay between 20 and 30 Loads of Dung on each Acre; and having ſpread it with great Care, they plough it in as before; the ſhorteſt rotten Dung is the beſt; and the Farmers, who have the Conveniency of making it, ſpare no Pains to make it good, being ſure of a proportionable Price for it. About Midſummer they plough a third Time, and between every 16 Feet and an Half, or Pole in Breadth, they leave a broad Furrow or Trench, which ſerves both as a Boundary to the ſeveral Parcels, when there are ſeveral Proprietors to one Incloſure, and to throw the Weeds in at the proper Seaſon.

To this Head belongs the Fencing the Grounds, becauſe moſt commonly, though not always, that is done before they plant. The Fences conſiſt of what they call dead Hedges, or Hurdles, to keep out not only Cattle of all Sorts, but eſpecially Hares, which would otherwiſe feed on the Saffron Leaves during the Winter.

About the Weather we need only obſerve, that the hotteſt Summers are certainly the beſt, and if there be gentle Showers from Time to Time, they can hardly miſs of a plentiful rich Crop, if the extreme Cold, Snow, or Rain of the foregoing Winter have not prejudiced the Heads.

The next Part of the Culture of Saffron is, planting, or ſetting the Roots; the only Inſtrument uſed for which is a narrow Spade, commonly termed a Spit Shovel.

The Time of Planting is commonly in the Month of *July*, a little ſooner or later, according as the Weather anſwers. The Method is this; one Man with his Spit Shovel raiſes between 3 and 4 Inches of Earth, and throws it before him about 6 or more Inches; two Perſons, generally Women, following with Heads, place them in the fartheſt Edge of the Trench he makes, at 3 Inches Diſtance from each other, or thereabouts; as ſoon as the Digger, or Spitter, has gone once the Breadth of the Ridge, he begins again at the other Side, and digging, as before, covers the Roots laſt ſet, and makes the ſame Room for the Setters to place a new Row, at the ſame Diſtance from the firſt, that they are from one another; thus they go on, till a whole Ridge, containing commonly one Rod, is planted, and the only Nicety in digging is, to leave ſome Part of the firſt *Stratum* of Earth untouched, to lie under the Roots; and, in ſetting, to place the Roots directly on their Bottom.

What Sort of Roots are to be preferred, ſhall be ſhewn under the 4th Head; but it muſt be obſerved in this Place, that formerly, when Roots were very dear, they did not plant them ſo thick as they do now; and that they have always ſome Regard to the Size of the Roots, placing the largeſt at a greater Diſtance than the ſmall ones.

The Quantity of Roots planted in an Acre, is generally 16 Quarters, or 128 Buſhels, which, according to the Diſtances left between them, as before aſſigned, and ſuppoſing all to be an Inch in Diameter one with another, ought to amount to 392,040 in Number.

From the Time the Roots are planted, till about the Beginning of *September*, or ſometimes later, there is no more Labour about them; but as they then begin to ſpire, and are ready to ſhew themſelves above Ground (which is known by digging a few out of the Earth), the Ground muſt be carefully pared with a ſharp Hoe, and the Weeds, *&c.* raked into the Furrows, otherwiſe they would hinder the Growth of the Plants

In ſome Time appear the Saffron Flowers; and this leads us to the 3d Branch of our preſent Method. The Flowers are gathered as well before as after they are full blown; and the moſt proper Time for this is early in the Morning. The Owners of the Saffron get together a ſufficient Number of Hands, who place themſelves in different Parts of the Field, pull off the whole Flowers, and throw them Handful by Handful into a Baſket, and ſo continue till all the Flowers are gathered, which happens commonly about Ten or Eleven o'Clock.

Having then carried Home all they have got, they immediately ſpread them upon a large Table, and fall to picking out the *Filamenta Styli*, or Chives, and together with them a pretty long Proportion of the *Stylus* itſelf, or String to which they are joined; the reſt of the Flower they throw away as uſeleſs. The next Morning they return into the Field again, whether it be wet or dry Weather, and ſo on daily, even on *Sundays*, till the whole Crop be gathered.

The Chives being all picked out of the Flowers, the next Labour about them is to dry them on the Kiln. The Kiln is built upon a thick Plank (that it may be moved from Place to Place) ſupported by four ſhort Legs; the Outſide conſiſts of 8 Pieces of Wood about 3 Inches thick, in form of a quadrangular Frame, about 12 Inches ſquare at the Bottom on the Inſide, and 22 Inches at Top; which is likewiſe equal to the perpendicular Height of it. On the Foreſide is left a Hole about 8 Inches ſquare, and 4 Inches above the Plank, through which the Fire is put in; over all the reſt Laths are laid pretty thick, cloſe to one another, and nailed to the Frame already mentioned, and then are plaſtered over on both Sides, as are alſo the Planks at Bottom very thick, to ſerve for an Hearth. Over the Mouth, or wideſt Part, goes an Hair Cloth, fixed to the Sides of the Kiln, and likewiſe to two Rollers, or moveable Pieces of Wood, which are turned by Wedges, or Screws, in order to ſtretch the Cloth. Inſtead of the Hair Cloth, many People now uſe a Net Work, or Iron Wire, with which it is obſerved that the Saffron dries ſooner, and with a leſs Quantity of Fuel; but the Difficulty in preſerving the Saffron from burning, makes the Hair Cloth be preferred by the niceſt Judges in drying.

The Kiln is placed in a light Part of the Houſe, and they begin by laying five or ſix Sheets of white Paper on the Hair Cloth, upon which they ſpread the wet Saffron between 2 and 3 Inches thick; this they cover with other Sheets of Paper, and over theſe lay a coarſe Blanket five or ſix Times doubled, or, inſtead thereof, a Canvas Pillow filled with Straw, and after the Fire has been lighted for ſome Time, the whole is covered with a Board, having a large Weight upon it.

At firſt they give it a pretty ſtrong Heat, to make the Chives ſweat (as their Expreſſion is); and in this, if they do not uſe a great deal of Care, they are in Danger of ſcorching, and ſo of ſpoiling all that is on the Kiln.

When it has been thus dried about an Hour, they take off the Board, Blanket, and upper Papers, and take the Saffron off from that which lies next it, raiſing, at the ſame Time, the Edges of the Cake with a Knife; then laying on the Paper again, they ſlide in another Board between the Hair Cloth and upper Papers, and turn both Papers and Saffron upſide-down, afterwards covering them as above.

This ſame Heat is continued an Hour longer; then they look on the Cake again, free it from the Papers, and turn it; then they cover it, and lay on the Weight as before. If nothing happens amiſs during theſe firſt two Hours, they reckon the Danger over; for they have nothing more to do, but to keep a gentle Fire, and turn their Cakes every half Hour, till thoroughly dry, for the doing of which as it ought, full twenty-four Hours are required.

In drying the larger plump Chives they uſe nothing more, but towards the latter End of the Crop, when theſe come to be ſmaller, they ſprinkle the Cake with a little ſmall Beer, to make it ſweat as it ought; and they begin now to think, that uſing two Linen Cloths next the Cake, inſtead of the two innermoſt Papers, may be of ſome Advantage in drying, but this Practice is followed as yet but by few.

Their Fire may be made of any Kind of Fuel, but that which ſmokes the leaſt is beſt, and Charcoal, for that Reaſon, is preferred to any other.

What Quantity of Saffron a firſt Crop will produce, is very uncertain; ſometimes 5 or 6 Pounds of wet Chives are got from one Rood; ſometimes not above one or two, and ſometimes not enough to make it worth while to gather and dry it; but this is always to be obſerved, that about 5 Pounds of wet Saffron go to make one Pound of dry, for the firſt 3 Weeks of the Crop, and 6 Pounds during the laſt Week; and now the Heads are planted very thick, 2 Pounds of dried Saffron may, at a Medium, be allowed to an Acre for the firſt Crop, and 24 Pounds for the two remaining; the third being conſiderably larger than the ſecond.

In order to obtain theſe, there is only a Repetition to be made every Year of the Labour of hoeing, gathering, picking, and drying, in the ſame Manner as before ſet down, without the Addition of any Thing new, except that they let Cattle into the Fields, after the Leaves are decayed, to feed upon the Weeds; or, perhaps, mow them for the ſame Uſe.

About the *Midſummer* after the third Crop is gathered, the Roots muſt be all taken up and tranſplanted; the Management requiſite for which, is the 4th Thing to be treated of. To take up the Saffron Heads, or break up the Ground (as the Term is), they ſometimes plough it, ſometimes uſe a forked Kind of Hoe, called a Pattock, and then the Ground is harrowed once or twice over; during all which Time of ploughing, or diging, and harrowing, 15 or more will find Work enough to follow and gather the Heads as they are turned up.

They are next to be carried to the Houſe in Sacks, and there cleaned and raiſed; this Labour conſiſts in cleaning the Roots thoroughly from Earth, and from the Remains of old Roots, old *Involucra*, and Excreſcences, and thus they become fit to be planted in new Ground immediately, or to be kept for ſome Time, without Danger of ſpoiling.

The Quantity of Roots taken up, in Proportion to thoſe which were planted, is uncertain; but at a Medium, it may be ſaid, that allowing for all the Accidents which happened to them in the Ground, and in breaking up from each Acre, may be had twenty-four Quarters of clean Roots, all fit to be planted.

The Owners are ſure to chooſe for their own Uſe the largeſt, plumpeſt, and fatteſt Roots; but do leaſt of all approve the longeſt pointed ones, which they call Spickets, or Spickards, for very ſmall, round, or flat Roots, are ſometimes obſerved to flower.

This is the whole Culture of Saffron in the Country above-mentioned, and we have only now to conſider the Charges and Profits which may be ſuppoſed, one Year with another, to attend that Branch of Agriculture; and of theſe I have drawn up the following Computation for one Acre of Ground, according to the Price of Labour in this Country.

	l.	*s.*	*d.*
Rent for three Years	3	00	00
Ploughing for three Years	0	18	00
Dunging	3	12	00
Hedging	1	16	00
Spitting and ſetting the Heads	1	12	00
Weeding or paring the Ground	1	04	00
Gathering and picking the Flowers	6	10	00
Drying the Flowers	1	06	00
Inſtruments of Labour for three Years, with the Kiln, about	0	10	00
Ploughing the Ground once, and harrowing twice	0	12	00
Gathering the Saffron Heads	1	00	00
Raiſing the Heads	1	12	00
Total Charge	23	12	00

This Calculation is made upon Suppoſition, that an Acre of Ground yields 26 Pounds of nett Saffron in three Years; which I ſtated only as a mean Quantity between the greateſt and the leaſt; and therefore the Price of Saffron muſt be judged accordingly, which I think cannot be done better than by fixing it at 30 Shillings *per* Pound; ſince in very plentiful Years it is ſold at 20, and is ſometimes worth between three and four Pounds; at this Rate 26 Pounds of Saffron are worth 39 Pounds, and the nett Profits of an Acre of Ground producing Saffron, will, in three Years, amount to 15 Pounds, 13 Shillings, or about 5 Pounds, 4 Shillings yearly.

This, I ſay, may be reckoned the nett Profit of an Acre of Saffron, ſuppoſing that all the Labour were to be hired for ready Money; but as the Planter and Family do a conſiderable Part of the Work themſelves, ſome of this Expence is ſaved; that is, by planting Saffron, he may not only reaſonably expect to clear about 5 Pounds yearly *per* Acre, but alſo to maintain himſelf and Family for ſome Part of each Year; and it is upon this Suppoſition only, that the Reſult of other Computations can be ſaid to have any tolerable Degree of Exactneſs, but the Calculations themſelves are undoubtedly very inaccurate.

I have ſaid nothing here concerning the Charge in buying, or Profits in ſelling, the Saffron Heads, becauſe, in many large Tracts of Ground, theſe muſt at length ballance one another, while the Quantity of Ground planted yearly continues the ſame; which has been pretty much the Caſe for ſeveral Years paſt.

Dr. *Patrick Blair*, deſigning to treat concerning the Crocus, in his ſixth Decad of his *Pharmaco-Botanologia*, in the Year 1725, ſent to me the following Queries:

1. After what Manner the Species are propagated?
2. Whether the Tap Root ſprings firſt, or the Bulb?

3. At what Seaſon the Leaves ſpring forth ?

To theſe Queries I ſent him the following Anſwer :

1. As to the Propagation of the Species.

This is only by the Roots or Offsets, which the old Roots produce in great Plenty, for I never ſaw any Thing like a Seed, or a Seed Veſſel produced, though I have let ſtand great Quantities of Flowers, purpoſely to try.

2. As to the Query, Whether the Tap Root ſprings firſt, and the Bulb be afterwards formed ?

As ſoon as the Roots begin to ſhoot upwards, there are are commonly two or three large Tap Roots ſent forth from the Side of the old Root, which will run downright two Inches and a Half, or more, into the Ground ; at the Place where theſe Bulbs firſt come out from the old one, will be formed a Bulb ſometimes (though not always, as you will hear preſently) ; and this Tap Root decays. The Bulb will increaſe in its Bigneſs, till at laſt it quite falls off, and is then left entire ; which commonly happens in *April*, when the Green begins to decay ; but many Times theſe tap or carrotty Roots never produce any Bulbs, but always retain the ſame Figure, and for ever after, I believe are barren ; for I planted a Parcel of theſe carrotty Roots four Years ago in a little Bed, where they have ever ſince remained, but have not produced one ſingle Flower, notwithſtanding they have produced a numerous Offspring of the ſame carrotty Roots.

And the People about *Saffron Walden* are well appriſed of this Barrenneſs, and therefore throw away all ſuch Roots when they make a new Plantation ; but as this Change of the Root is not peculiar to the Saffron only, permit me to digreſs a little, to give you ſome Account of this Matter.

In the Pariſh of *Fulham*, near *London*, the Gardeners uſed to drive a great Trade in the Jonquil, or *Narciſſus juncifolius*, *flore multiplici*, at which Place the greateſt Quantity of thoſe Roots was raiſed for Sale, as perhaps was in any Part of *England*, and turned to as great Account for the Maſter, as any Crop they could employ their Ground in, till of late Years, that moſt of their Roots have turned carrotty, and ſo proved barren, or have produced only ſingle Flowers ; ſo that the Gardeners being hereby diſheartened, have thrown them out entirely, neglecting to cultivate them, ſatisfying themſelves with this Reaſon, That their Ground was tired with them.

But to return to the Crocus ; beſides thoſe Roots already mentioned, there will be three or four ſmall Bulbs formed upon the upper Part of the Root, and ſome underneath ; which from the firſt Appearance aſſume the round Shape of its Parent Root, and have no Tap Root belonging to them ; thoſe on the upper Part of the Root rarely emit ſo much as a Fibre, but receive their Nouriſhment immediately from the old Root ; but thoſe on the under Side ſend out many Fibres all around, by which they draw their Nouriſhment from the Ground ; theſe being parted from the old Root much ſooner than the other, ſtand in need of fit Organs for receiving their Nouriſhment.

I have ſometimes taken up ſome, through the Middle of which hath been a Root of the *Gramen caninum*, or Couch Graſs, which ſome People have imagined had Strength enough to force its Way though the Crocus Root ; but the Truth is, the Root of the Graſs cloſely, adhering to the old Root of the Crocus, juſt at the Place where the young Roots were emitted, theſe young Roots, being quick of Growth, incloſed the Root of the Graſs, and thus I have ſeen ſeveral Roots run through each other in the ſame Manner.

But beſides theſe Offsets mentioned, directly upon the upper Part of the Root is one large Root formed, of equal Bigneſs with the old one, and this is the Time that the Root is *Radix gemina*, as *Tournefort* calls it ; for they are not ſo at any other Seaſon, and therefore I think it a very improper Appellation, for when the new Roots are perfectly formed, the old ones, with their Coats, fall off and die, and leave the new Roots all ſingle. This has occaſioned ſeveral People to doubt of what *Tournefort* had ſaid of the Roots, till I took up ſome Plants at that Seaſon, and with them the two Roots of equal Bigneſs, *i. e.* the old one at the Bottom, and the new one at the Top.

Dr. *Blair* alſo happening, in viewing a Root, to be ſurpriſed with a different Appearance from what he had ſeen before, or heard of, ſent me another Letter.

The Manner of the Root was thus ; from the upper Part of the Bulb, where it ſends forth all the Leaves within a common Tunicle, at the Exit there was an Appendix about an Inch and a Half long, about the Groſſneſs of a large Turkey, or Gooſe Quill, cylindrical and blunt, without the leaſt radical Fibre, by which it might receive the Nouriſhment ; ſmooth or poliſhed, and bluiſh in the Surface, conſiſting of ſeveral circular Lines, when cut tranſverſely ; white, with a hard greeniſh Center like a Carrot, when it hath puſhed forth the flowering Stem, not unlike the Stolones of ſome running Root, ſuch as the Mints below Ground, only the Extremity deſcended obliquely, inſtead of aſcending, to ſend forth Leaves to produce a new Plant, and what is moſt remarkable, this did not happen to one or two Plants, but to the whole Bundle, which were above twenty diſtinct Sets, differing in nothing but *majus* and *minus* ; the Bulb ſeemed at the ſame Time to be pined and emaciated, though it emitted large radical Fibres like thoſe of a Leak.

I, having received this Account from him by Letter, ſent him the following Anſwer :

I received yours in Anſwer to my laſt, with the Figure of the Roots of ſome Sets of *Crocus Autumnalis* you have taken out of the Ground ; I have found a Figure in *Dodonæus* which correſponds with it, and thoſe Roots are no new Thing with the Saffron Gardeners, who always throw them away when they make freſh Plantations.

Your Figure does not agree with my Tap Roots, as you will ſee by the Figure taken as juſt from the Life as I could. In mine, you will find the Bulb turned Sideways, which I ſtill find to be conſtant in all the Roots I have examined, which have been a great many, and makes me ſuſpect theſe Tap Roots are occaſioned by the accidental Poſition of the Roots in planting, which may retard the aſcending Sap, the flowering Stem being thereby turned into a crooked Figure, and the Tap Roots are full of longitudinal Veſſels of a conſiderable Dimenſion, ſo that the greater attracting Power of the Sap being hereby diverted downwards, the Flower Stem may be quite deſtitute of proper Nouriſhment.

The Method you propoſe to remedy this Inconveniency, will not do, for I have removed ſome of theſe Roots at the Seaſon when the Tap Roots were forming, and this alone deſtroyed them all; ſo that I am perſuaded, the cutting them off entirely will kill them.

The Method I uſed with the Jonquils was, to lay ſome Tiles juſt under the Roots, to prevent their running downwards, but this has not anſwered, nor do I think it poſſible wholly to recover them; for the Alteration is not only in the Root and Flower, but alſo in the Leaf and Blade, which before was fiſtulous; but, after this Alteration in the Root, becomes a plain ſulcated Leaf, and if it ever bloſſoms after, the Flowers are large and ſingle, which before were ſmall and double, but the Saffron, after the Change of its Roots, produces a ſmall narrow Blade, ſeldom half the Length of thoſe in a natural State....

Upon this Dr. *Blair* formed this Concluſion:

Theſe additional Obſervations plainly ſhew, that neither the carrotty Root, nor the baſtard Tap Root, as I may call it, are merely accidental, or what may be called *Luſus naturæ*, but certain Diſeaſes incident to ſuch Roots; for were they accidental, they would not have the ſame Appearances to different Perſons in different Soils and Climates, nor would ſo many taken up together have ſuch a Reſemblance to each other, as I have twice obſerved.

CROTOLARIA. *Lin. Gen. Plant.* 771. *Dill. Eltb.* 122. *Tourn. Inſt. R. H.* 644. [of Κρόταλον, *Gr.* Rattle.

The *Characters* are,

The Empalement of the Flower is divided into 3 large Segments; the two upper reſting on the Standard, the lower is concave, trifid, and is ſituated below the Keel. The Flower is of the Butterfly Kind; the Standard is large Heart-ſhaped, and pointed; the Wings are oval and half the Length of the Standard; the Keel is pointed and as long as the Wings; it hath ten Stamina which are united, terminated by ſingle Summits, and an oblong reflexed Germen, ſupporting a ſingle Style, crowned by an obtuſe Stigma. The Germen becomes a ſhort turgid Pod with one Cell, opening with two Valves, and filled with Kidney-ſhaped Seeds.

The *Species* are,

1. CROTOLARIA *foliis ſimplicibus ovatis, ſtipulis ſemicordatis, ramis tetragonis. Flor. Zeyl.* 277. *Crotolaria* with ſingle oval Leaves, Heart-ſhaped *Stipulæ*, and four cornered Branches. This is the *Crotolaria Aſiatica folio ſingulari verrucoſo, floribus cæruleis. H. L.* 199. *Aſiatick Crotolaria* with a ſingle watered Leaf, and blue Flowers.

2. CROTOLARIA *foliis ſimplicibus lanceolatis piloſis, petiolis decurrentibus. Crotolaria* with ſingle, hairy Spear-ſhaped Leaves, and running Foot Stalks. This is the *Crotolaria Americana, caule alato foliis piloſis, floribus in thyrſo luteis Martyn. Cent.* 43. *American Crotolaria* with a winged Stalk, and yellow Flowers in looſe Spikes.

3. CROTOLARIA *foliis oblongo-ovatis hirſutis ſeſſilibus, ſtipulis acutis pedunculis longioribus. Crotolaria* with oblong, oval, hairy Leaves, ſitting cloſe to the Branches, pointed *Stipulæ*, and longer Foot Stalks. *Crotolaria hirſuta minor Americana herbacea, caule ad ſummarum ſagittato. H. L.* 202. Smaller hairy herbaceous *American Crotolaria* with a Stalk, Arrow-ſhaped at the Top.

4. CROTOLARIA *foliis ſimplicibus, lineari-lanceolatis hirſutis petiolis decurrentibus, caule fruticoſo. Crotolaria* with ſingle narrow, Spear-ſhaped hairy Leaves, running Foot Stalks, and a ſhrubby Stalk. This is the *Crotolaria fruteſcens hirſuta, flore luteo, ramulis alatis, foliis mucronatis. Houſt. Mſſ.* Shrubby hairy *Crotolaria* with a yellow Flower, winged Branches, and pointed Leaves.

5. CROTOLARIA *foliis ſimplicibus lanceolatis, villoſis, argenteis, ſeſſilibus, ſiliquis pendulis. Crotolaria* with ſingle, Spear-ſhaped, hairy, ſilvery Leaves ſitting cloſe to the Branches, and hanging Pods. *Crotolaria Aſiatica, folio argenteo villoſo, flore luteo, ſiliquis pendulis in Spicâ. Boerh. Ind.* Aſiatick *Crotolaria* with a ſilvery hairy Leaf, a yellow Flower, and hanging Pods diſpoſed in a Spike.

6. CROTOLARIA *foliis cordato-ovatis perfoliatis. Lin. Sp. Pl. Crotolaria* with oval Heart-ſhaped Leaves perforated by the Stalks. This is the *Crotolaria perfoliatæ folio. H. E. Crotolaria* with a thorough-wax Leaf.

7. CROTOLARIA *foliis ſimplicibus, oblongis cuneiformibus retuſis. Flor. Zeyl.* 276. *Crotolaria* with ſingle oblong, Wedge-ſhaped Leaves reflexed at the Top. This is the *Crotolaria Aſiatica, floribus luteis, folio ſingulo cordiformi. H. L.* 200. Aſiatick *Crotolaria* with yellow Flowers, and a ſingle Heart-ſhaped Leaf.

8. CROTOLARIA *foliis ſimplicibus ovatis villoſis, petiolis ſimpliciſſimis, ramis teretibus. Hort. Cliff.* 357. *Crotolaria* with ſingle, oval, hairy Leaves, ſingle Pedicles, and taper Branches. This is the *Crotolaria arboreſcens Africana, Styracis folio. H. L.* 170. *African* Tree *Crotolaria* with a Storax Tree Leaf.

9. CROTOLARIA *foliis ovatis ſeſſilibus, ramulis angulatis hirſutis, floribus lateralibus ſimpliciſſimis. Crotolaria* with oval Leaves, ſitting cloſe to the Branches, which are angular and hairy, and ſingle Flowers proceeding from the Sides of the Branches.

The 1ſt Sort grows naturally in *India*. This is an annual Plant, which hath an herbaceous four cornered Stalk, ariſing about 2 Feet high, dividing into three or 4 Branches; theſe have alſo four acute Angles, and are garniſhed with oval, watered Leaves, of a pale green Colour, ſtanding on very ſhort Foot Stalks; the Flowers are produced in Spikes at the End of the Branches, and are of the Butterfly Shape, and of a light blue Colour; theſe are ſucceeded by ſhort turgid Pods, which incloſe one Row of Kidney-ſhaped Seeds. It flowers in *July* and *Auguſt*, and the Seeds ripen in Autumn.

This Plant is propagated by Seeds, which muſt be ſown on a hot Bed in Spring, and when the Plants are come up an Inch high, they ſhould be tranſplanted to another hot Bed to bring them forward, obſerving to ſhade them from the Sun, till they have taken new Root, after which they ſhould have free Air admitted to them in Proportion to the Warmth of the Seaſon, to prevent their being drawn up weak. When the Plants have acquired Strength in this Bed, they ſhould be carefully taken up with Balls of Earth to their Roots, and each planted in a ſeparate Pot, filled with light Kitchen Garden Earth, and plunged into a moderate hot Bed of Tanners Bark, carefully ſhading them till they are rooted again, then they muſt be treated as other tender Plants, giving them proper Air and Water; when the Plants are grown ſo tall as to nearly reach the Glaſſes of the hot Bed, the Pots may be removed into an airy

Glaſs Caſe, or Stove, where they may be ſcreened from inclement Weather, and have proper Air in hot Weather; with this Treatment the Plants will flower in *July*, and continue to produce freſh Spikes of Flowers till the End of *Auguſt*, and thoſe Spikes of Flowers which appear early in the Seaſon, will be ſucceeded by ripe Seeds in *September*, ſoon after which the Plants will decay.

The 2d Sort grows naturally at *La Vera Cruz* from whence the Seeds were ſent me; this riſes with a compreſſed winged Stalk near 3 Feet high, putting out ſeveral Side Branches, garniſhed with Spear-ſhaped Leaves near three Inches long, and one broad, which are covered with ſoft Hairs, and ſit cloſe to the Branches, alternately; from the Foot Stalks of each there runs a Border or leafy Wing, along both Sides of the Branches; the Flowers are produced in looſe Spikes at the End of the Branches, of a pale yellow Colour, the Standard being ſtretched out a conſiderable Length beyond the Leaves. Theſe are ſucceeded by ſhort turgid Pods, which, when ripe, are of a deep blue Colour, having one Row of ſmall Kidney-ſhaped Seeds which are of a greeniſh brown Colour. This flowers and ſeeds about the ſame Time with the former, and requires the ſame Treatment.

The 3d Sort was ſent me from *South Carolina*, and *Jamaica*; it grows naturally in ſeveral Parts of *America*; this is an annual Plant, which riſes with a ſlender Stalk a Foot and a Half high, dividing into 3 or 4 ſpreading Branches, garniſhed with oblong oval Leaves ſitting cloſe. The upper Part of the Branches have two leafy Borders or Wings, running from one Leaf to the other, but the lower Part of the Branches have none; the Foot Stalks of the Flowers, ariſe from the Side of the Stalk; thoſe from the lower Part of the Branches are above a Foot long, the upper are about ſix Inches, they are very ſlender, and ſuſtain one or two pale yellow Flowers at their Tops, which are not more than half ſo large as the former Sort, and are ſucceeded by very ſhort turgid Pods, in which are incloſed three or four ſmooth Kidney-ſhaped Seeds. This Sort requires the ſame Culture as the two former, and flowers at the ſame Seaſon.

The 4th Sort grows naturally in *Jamaica*; this riſes with a ſhrubby taper Stalk near 4 Feet high, ſending out many Side Branches which are very ſlender, ligneous, and covered with a light brown Bark; theſe are garniſhed with very narrow Spear-ſhaped Leaves which are hairy, and ſit cloſe to the Branches; the younger Shoots have a leafy Border or Wing on two Sides, but the old Branches have none; the Flowers are produced near the End of the Branches, 3 or 4 growing alternate on a looſe Spike, they are of a dirty yellow, and ſmall; the Pods which ſucceed them are about an Inch long, very turgid, and of a dark blue when ripe. This Sort is propagated by Seed, which ſhould be ſown on a hot Bed, and the Plants treated in the ſame Manner as thoſe before, but in Autumn they ſhould be placed in the Stove, where they will live through the Winter, and flower early the following Summer, ſo will perfect their Seeds very well.

The Seeds of the 5th Sort were brought me from the Coaſt of *Malabar*, which ſucceeded in the *Chelſea* Garden. This riſes with an angular Stalk near 4 Feet high, dividing upward into 3 or 4 Branches, garniſhed with narrow Spear-ſhaped Leaves placed alternately on very ſhort Foot-Stalks, pretty cloſely covered with ſoft ſilvery Hairs. The Flowers are produced at the End of the Branches, in looſe Spikes; theſe are large, of a deep yellow, and the Style ſtands out beyond the Standard. The Flowers are ſucceeded by large turgid Pods, containing one Row of large Kidney-ſhaped Seeds.

This Plant is annual in *England*, but by the lower Part of the Stalk growing woody, it appears to be of longer Duration in the Country where it naturally grows; though it will not live through the Winter here; for if the Plants are placed in a Stove, the Heat is too great for them; and in a Green-houſe they are very ſubject to Mouldineſs in damp Weather. I have ſown the Seeds of this in the full Ground, where the Plants have grown upward of 3 Feet high, and have flowered very well, but no Pods were formed on theſe; and when they have been treated tenderly, the Plants have grown much larger, and produced a greater Number of Flowers, but have produced no Seeds. The only Way by which I could ever obtain any Seeds, was by raiſing the Plants in Pots on hot Beds, and the Beginning of *July* turning them out of the Pots into the full Ground, on a very warm Border under a Wall, in which Situation they flowered very well, and ſome Pods of Seeds were ripened.

The 6th Sort was ſent me by Dr. *Dale*, from *South Carolina*, who had the Seeds ſent him from the Country at a great Diſtance from the *Engliſh* Settlements. By the Deſcription ſent me with the Seeds, it grows with a ſhrubby Stalk 4 or 5 Feet high, but the Plants which were raiſed here, periſhed at the Approach of Winter, having only flowered, without producing any Pods. The Stalks are round, and covered with a light brown Bark, theſe are garniſhed with ſmooth, oval, Heart-ſhaped Leaves, about 4 Inches long, and near 3 broad; ſurrounding the Stalk in ſuch a manner as if it were run through the Middle of the Leaves. The Flowers grow ſingly, ſitting cloſe to the Boſom of each Leaf, toward the upper Part of the Branches; they are of a pale yellow Colour, and appear here in *Auguſt*, but as the Plants did not produce any Pods, I can give no Account of them. This is one of the moſt ſingular Plants of the Genus I have yet ſeen.

The 7th Sort riſes with an herbaceous Stalk near 3 Feet high, dividing upward into ſeveral Branches, garniſhed with oblong Leaves, which are narrow at their Baſe, but gradually widen to the Top, where they are rounded and indented in the Middle in the Shape of a Heart; they are of a pale green, and ſmooth. The Flowers are produced in Spikes at the End of the Branches, they are pretty large, and of a yellow Colour. Theſe appear in *July*, and the Seeds ripen in Autumn, provided the Plants are brought forward in Spring, and afterward treated as hath been directed for the firſt Sort. This grows naturally in the Iſland of *Ceylon*, and is an annual Plant, periſhing ſoon after it perfects Seeds.

The 8th Sort grows naturally at the *Cape of Good Hope*, from whence I received the Seeds. This riſes with a ſhrubby Stalk about 5 Feet high, dividing into ſeveral Branches, garniſhed with roundiſh Leaves, ſitting cloſe to the Branches; they are of a hoary green, and ſoft to the Touch, the Branches are taper and ſmooth; the Flowers are produced at the End of the Branches in looſe Spikes; they are about the Size of thoſe of the firſt Sort, and of a fine blue Colour.

This Plant flowers in *June* and *July*, and ſometimes will ripen its Seeds in Autumn. It is propagated by Seeds, ſown on a good hot Bed in Spring, and when the Plants are fit to remove, ſhould be each tranſplanted into a ſmall Halfpenny Pot, and plunged into a hot Bed of Tanners Bark, and after muſt be treated as the 4th Sort, placing the Plants in a moderate Stove in Winter, otherwiſe they cannot be preſerved in *England*; the ſecond Year the Plants will flower, and with proper Care their Seeds will ripen.

The 9th Sort was ſent me from *Campeachy*, where the Plant grows naturally; this riſes with a taper upright Stalk near 3 Feet high, dividing upward into ſeveral Branches, which grow erect, and are hairy; they are garniſhed with oval, Spear-ſhaped Leaves of a pale green Colour; the Flowers are produced ſingly from the Side of the Branches, of a bright yellow, and are ſucceeded by ſhort turgid Pods, having one Row of Kidney-ſhaped Seeds. It flowers in *July* and *Auguſt*, and with the ſame Treatment as the firſt Sort, will perfect Seeds in Autumn. This is an annual Plant, which periſhes ſoon after the Seeds are ripe.

As moſt of theſe Plants are annual, they require to be brought forward in Spring, otherwiſe the Summers are too ſhort for them to perfect Seeds; and unleſs carefully managed, they will not flower well here; for in general the Summers in this Country are not favourable for ſuch tender Plants. Therefore in order to have theſe tender annuals in Perfection; there ſhould be a low Glaſs Caſe erected about five or ſix Feet high, which ſhould be made with Glaſſes to open or ſlide down on every Side, as ſhould alſo the Top on both Sides, having ſliding Glaſſes, that the Plants may have Sun and Air on every Side; in this there ſhould be a Pit for Tanners Bark to make a hot Bed, the whole Extent, (a particular Deſcription of which will be exhibited under the Article Stove) in this hot Bed may be placed all the very curious tender annual Plants, where the Sun will conſtantly ſhine on them, ſo long as he makes his Appearance above the Horizon, and here they may have Plenty of free Air admitted at all Times, when the Weather is warm, ſo may be brought to equal Perfection, as in the warm Countries where they naturally grow; for the Warmth of the Tan to the Roots, and the Heat of the Sun through the Glaſſes, will in Summer, be equal to the Heat of moſt Countries.

Theſe Plants naturally grow on ſandy light Soils, ſo ſhould always be planted in ſuch, and the Pots muſt not be too large, for in ſuch they will not thrive; when they have filled the ſmall Pots with their Roots in which they were firſt planted, they ſhould be ſhaken out, and put into penny Pots, which will be large enough for all the annual Kinds, but thoſe of longer Duration will require Pots a little larger the following Spring. The Waterings of theſe Plants ſhould be performed with Caution, for too great Moiſture will rot the Fibres of their Roots; in Summer, if they are gently watered three or four Times a Week in hot Weather, it will be ſufficient.

I have not here enumerated any of the Plants which have trifoliate Leaves, but ſhall refer them to the Genus *Ononis*, under which *Tournefort* and moſt other Botaniſts have placed them.

CROTON. *Lin. Gen. Plant.* 960. *Ricinoides. Tourn. Inſt.* 655. *Tab.* 423. Baſtard *Ricinus*.

The *Characters* are,

It hath male and female Flowers in the ſame Plant; the Flowers have a 5 leaved Empalement, they have 5 Petals, thoſe of the male being no larger than the Leaves of the Empalement; the male have 5 nectarious Glands, which are ſmall, and fixed to the Receptacle; theſe have 10 or 15 Stamina, joined at their Baſe, and terminated by twin Summits. The female Flowers have a roundiſh Germen, ſupporting 3 reflexed ſpreading Styles, crowned by bifid reflexed Stigmas; the Germen becomes a roundiſh three cornered Capſule, with three Cells, each containing a ſingle Seed.

The *Species* are,

1. CROTON *foliis rhombeis repandis, capſulis pendulis caule herbaceo. Hort. Upſal.* 200. *Croton* with rhomboid reflexed Leaves, pendulous Capſules, and an herbaceous Stalk. This is the *Ricinoides ex quâ paratur. Tournſol. Gallorum. Tourn. Inſt.* 655. Baſtard *Ricinus* from which the *Tournſol* of the *French* is made.

2. CROTON *foliis ovato-lanceolatis hirſutis, crenatis, floribus conglomeratis ſeſſilibus. Croton* with oval Spear-ſhaped, hairy, crenated Leaves, and Flowers growing in Cluſters, ſitting cloſe to the Stalks. *Ricinoides herbacea, folio ſubrotundo ſerrato, fructu parvo conglomerato. Houſt. Mſſ.* Herbaceous Baſtard *Ricinus*, with a roundiſh Leaf, and ſmall Fruit growing in Cluſters.

3. CROTON *foliis ovato-lanceolatis, minimè ſerratis, caule herbaceo hirſuto, floribus alaribus pedunculis longioribus. Croton* with oval Spear-ſhaped Leaves, ſlightly ſawed, a hairy herbaceous Stalk, and Flowers proceeding from the Sides of the Stalks, ſtanding upon longer Foot Salks. *Ricinoides paluſtre, foliis oblongis ſerratis, fructu hiſpido. Martyn. Cent.* 38. Marſh Baſtard *Ricinus* with oblong ſawed Leaves, and a prickly Fruit.

4. CROTON *foliis inermi-ſerratis, inferioribus quinquelobis, ſuperioribus trilobis. Hort. Cliff.* 445. *Croton* with Leaves ſmoothly ſawed, the lower ones having 5 Lobes, and the upper three. *Ricinoides herbacea, foliis trifidis vel quinquefidis & ſerratis. Houſt. Mſſ.* Herbaceous Baſtard *Ricinus* with trifid, or quinquefid ſawed Leaves.

5. CROTON *tetraphyllum, foliis lanceolatis, acuminatis, ſubtus cæſiis, caule herbaceo ramoſo.* Four-leaved *Croton* with Spear-ſhaped pointed Leaves, gray on their under Side, and a branching herbaceous Stalk. This is the *Ricinoides humilis foliis oblongis acuminatis, ſubtus cæſiis. Houſt. Mſſ.* Dwarf Baſtard *Ricinus* with oblong pointed Leaves, and gray on their under Side.

6. CROTON *foliis lanceolatis glabris, caule fruticoſo, floribus alaribus & terminalibus. Croton* with ſmooth Spear-ſhaped Leaves, a ſhrubby Stalk, and Flowers growing from the Sides and Tops of the Branches. *Ricinoides fruteſcens, lauri folio, calice ampliſſimo viridi. Houſt. Mſſ.* Shrubby Baſtard *Ricinus*, with a Laurel Leaf, and a very large green Empalement to the Fower.

7. CROTON *foliis cordatis, acuminatis, ſubtus tomentoſis, floribus alaribus ſeſſilibus, caule fruticoſo. Croton* with Heart-ſhaped pointed Leaves, woolly on their under

Side, and Flowers growing cloſe to the Sides of the Stalks, which are ſhrubby.

8. CROTON *foliis lineari-lanceolatis, glabris, ſubtus argenteis, caule fruticoſo, floribus ſpicatis terminalibus.* *Croton* with narrow Spear-ſhaped ſmooth Leaves, white on their under Side, a ſhrubby Stalk, and Flowers growing in Spikes at the Ends of the Branches. This is the *Ricinoides fruteſcens odorata, foliis anguſtis, ſubtus albicantibus. Houſt. Mſſ.* Baſtard ſhrubby *Ricinus*, ſmelling ſweet, with narrow Leaves, whitiſh on their under Side; called wild, or *Spaniſh* Roſemary, in *Jamaica.*

9. CROTON *foliis oblongo-cordatis tomentoſis, caule fruticoſo ramoſo, floribus ſpicatis terminalibus.* *Croton* with oblong Heart-ſhaped woolly Leaves, a ſhrubby branching Stalk, and Flowers growing in Spikes at the Ends of the Branches. This is the *Ricinoides Americana fruteſcens, Althææ folio. Plum. Cat.* Shrubby *American* Baſtard *Ricinus* with a Marſhmallow Leaf.

10. CROTON *foliis ovatis tomentoſis, integris, ſerratis, Hort. Cliff.* 444. *Croton* with oval woolly Leaves, which are entire, and ſawed. This is the *Ricinus humilis foliis ſubrotundis ſerratis, ſubtus argenteis, flore fructuque conglomeratis. Houſt. Mſſ.* Dwarf *Ricinus* with roundiſh ſawed Leaves, ſilvery on their under Side, and a Flower and Fruit growing in Cluſters.

11. CROTON *foliis cordatis acutis, ſubtus tomentoſis, caule fruticoſo, floribus ſpicatis terminalibus & alaribus.* *Croton* with pointed Heart-ſhaped Leaves, woolly on their under Side, a ſhrubby Stalk, and Flowers growing in Spikes on the Tops and Sides of the Branches. This is the *Ricinus ſalviæ folio utrinque molli. Pet. Hort. Sicc.* *Ricinus* with a Sage Leaf, and ſoft on both Sides.

The 1ſt Sort grows naturally in the South of *France*, from whence I received the Seeds; this is an annual Plant, which riſes with an herbaceous branching Stalk, about 9 Inches high, garniſhed with irregular, or rhomboidal figured Leaves, near two Inches long, and one Inch and a Quarter broad in their wideſt Part; theſe ſtand upon ſlender Foot Stalks, near 4 Inches long. The Flowers are produced in ſhort Spikes from the Side of the Stalks, at the End of the Branches; the upper Part of the Spike is compoſed of male Flowers, having many Stamina, which coaleſce at the Bottom; the lower Part hath female Flowers, which have each a roundiſh 3 cornered Germen, which afterward becomes a roundiſh Capſule with 3 Lobes, having 3 Cells, each including one roundiſh Seed. This flowers in *July*, but rarely ripens Seeds in this Country.

The Seeds ſhould be ſown early in Spring, on a Border of light Earth, in a warm Situation, where they are deſigned to remain, and when the Plants come up, they ſhould be thinned where too cloſe, leaving them ſix Inches aſunder, after this they require no Care but to keep them clean from Weeds. If the Summer proves favourable, the Plants will flower in *July*, and in very warm Autumns they ſometimes perfect Seeds.

This is the Plant from which the *Tournſole* is made, uſed for colouring Wines and Jellies; it is made of the Juice which is lodged between the Empalement and the Seeds, which, if rubbed on Cloths at firſt appears of a lively green, but ſoon changes to a bluiſh purple Colour; if theſe Cloths are put into Water, and afterward wrung, they will dye the Water to a Claret Colour; the Rags thus dyed, are brought to *England*, and ſold in the Druggiſt's Shops by the Name of *Tournſole*.

The 2d Sort grows naturally at *La Vera Cruz*, from whence the Seeds were ſent me; this is an annual Plant, which riſes about a Foot high; it hath an angular Stalk, cloſely covered with ſmall briſtly Hairs, which ſting; the Branches are naked from their Diviſions to the Top, where they are garniſhed with a few oval Spear-ſhaped Leaves, ſawed on their Edges; they are an Inch and a Half long, and 3 Quarters of an Inch broad, of a light green, ſtanding on Foot Stalks one Inch long. The Flowers are produced in cloſe ſhort Spikes at the End of the Branches, thoſe on the upper Part being male, and the lower female; they are white, and the male ſoon falls away, but the female are ſucceeded by roundiſh Capſules, having 3 Lobes; theſe grow in cloſe Cluſters, they have 3 Cells, each containing one roundiſh Seed. It flowers in *July*, and the Seeds ripen in Autumn.

The 3d Sort was diſcovered by the late Dr. *Houſtoun*, at *La Vera Cruz*, from whence he ſent me the Seeds; this is alſo an annual Plant, which grows naturally in low marſhy Grounds, where it hath a very different Appearance from what it puts on when ſown upon dry Land; thoſe of the watery Places have broad flat Stalks, and Leaves 3 Inches long, which are ſcarce a Quarter of an Inch broad; theſe are rough, and but little indented on their Edges, but thoſe Plants upon dry Ground have oval Leaves 3 Inches long, and upwards of two Inches broad, which are ſawed on their Edges. The Flowers are produced at the Wings of the Leaves, in ſhort looſe Spikes, having 4 or 5 herbaceous male Flowers at the Top of each, and 3 or 4 female Flowers at the Bottom, which are ſucceeded by roundiſh Capſules with 3 Lobes, covered with a prickly Huſk; theſe have 3 Cells, each incloſing a ſingle Seed. It flowers and ſeeds about the ſame Time as the former.

The 4th Sort was diſcovered by the ſame Gentleman, at the ſame Place; this is an annual Plant, which riſes with a taper herbaceous Stalk, a Foot and a Half high, dividing into ſeveral Branches, garniſhed with ſmooth Leaves, ſtanding on very long Foot Stalks, and are for the moſt part placed oppoſite, as are alſo the Branches; the lower Leaves are divided deeply into 5 oblong Leaves, and the upper into 3, which are ſlightly ſawed on their Edges, and end in acute Points. The Flowers are produced in looſe Spikes at the End of the Branches, thoſe on the upper Part being male, and the lower female, they are of a whitiſh herbaceous Colour; the female Flowers are ſucceeded by oblong Capſules, having 3 Lobes, which open in 3 Parts, having 3 Cells, each containing one oblong Seed. This flowers and ſeeds at the ſame Time as the former Sorts.

The 5th Sort was found growing naturally at the *Havannah*, by the late Dr. *Houſtoun*, who ſent me the Seeds; this is an annual Plant, which rarely grows more than 6 Inches high, dividing into 2 or 3 Branches, the lower Parts of theſe are garniſhed at each Joint with 4 Leaves placed in form of a Croſs, 2 of which are 3 Inches long, and one Inch broad near their Baſe, ending in acute Points; theſe ſtand oppoſite, and the other 2 Leaves between theſe are about 2 Inches long, and a Quarter of an Inch broad; they are of a light green on their upper Side, and of a gray or Aſh Colour on their under. The Flowers are produced in long looſe Spikes at the Top of the Stalks, 2 or 3 of theſe Spikes ariſing from the ſame Joint; the upper Part of theſe Spikes have male, and the lower female Flowers, of an herbaceous Colour; the female Flowers are ſucceeded by round Capſules with 3 Cells, each containing one roundiſh Seed. This flowers and ſeeds about the ſame Time with the former Sorts.

The 6th Sort was diſcovered in the Iſland of *Jamaica*, where it grows naturally. It riſes with a ſhrubby Stalk to the Height of 7 or 8 Feet, which is covered with an Aſh-coloured Bark, and divides into many ſlender Branches upward; ſome of theſe Branches are terminated by 5 or 6 ſmaller, which ariſe from the ſame Joint; theſe are naked below, but toward their upper Part are garniſhed with ſmooth Spear-ſhaped Leaves, about two Inches and a Half long, and 3 Quarters of an Inch broad, ſtanding on pretty long Foot Stalks without Order; the Flowers are produced in ſhort Spikes at the End of the Branches; they are of an herbaceous Colour, and incloſed in large green Empalements.

The 7th Sort was ſent me from *Jamaica*; this riſes with a ſhrubby Stalk, 7 or 8 Feet high, ſending out many irregular Branches, covered with an Aſh-coloured Bark, and garniſhed with Heart-ſhaped Leaves, near 4 Inches long, and 2 broad in their wideſt Part, ending in acute Points; they are of a light green on their upper Side, but woolly on their under, ſtanding on ſlender Foot Stalks without any Order, ſometimes ſingle, and at others, 2 or 3 ariſe from the ſame Joint. The Flowers are produced in ſhort Spikes from the Side of the Branches, they are of a whitiſh green Colour, and the female Flowers are ſucceeded by Capſules, having 3 Cells, each including a ſingle Seed.

The 8th Sort grows naturally in *Jamaica*; this riſes with a ſhrubby Stalk, about 6 or 7 Feet high, ſending out many Side Branches, covered with a ſmooth Bark, of a yellowiſh white Colour, garniſhed very cloſely with narrow ſtiff Leaves, near 3 Inches long, and about one Eighth of an Inch broad, of a light green their upper Side, but their under Side is the ſame Colour as the Bark, the Mid-rib is furrowed on their upper Side, and very prominent on the lower; the upper Part of the Branches divide into 4 or 5 ſmaller, which ariſe from the ſame Joint, and are nearly equal in their Length, between theſe ariſes a long looſe Spike of whitiſh green Flowers. The whole Plant hath an aromatick Odour when rubbed. The Seeds grow in roundiſh Capſules having 3 Cells, each including a ſingle Seed.

The 9th Sort grows naturally in *Jamaica*; this riſes with a ſhrubby Stalk 6 or 7 Feet high, dividing upward into ſeveral Branches, covered with a yellowiſh Down; theſe are garniſhed with long Heart-ſhaped Leaves, ending in acute Points; theſe are 2 Inches and a Half long, and one broad in their wideſt Part, ſtanding on long Foot Stalks, and covered on both Sides with a woolly Down of the ſame Colour as the Branches. The Flowers are produced on long cloſe Spikes at the End of the Branches; the male Flowers, ſituated on the upper Part of the Spikes, have white Flowers of one Leaf, divided into 5 Parts, almoſt to the Bottom, and have 5 taper Stamina, ſituated in the Bottom. The female Flowers, on the lower Part of the Spikes have large woolly Empalements, and are ſucceeded by round Capſules with 3 Cells, each including a ſingle Seed.

The 10th Sort was diſcovered at *Campeachy*, from whence I received the Seeds; this is an annual Plant, which riſes with an herbaceous Stalk a Foot and Half high, dividing toward the Top into ſeveral ſmall Branches, garniſhed with oval woolly Leaves, near 3 Inches long, and 2 and a Half broad in the Middle, ſtanding on hairy Foot Stalks 3 Inches long. The Flowers are produced at the Extremity of the Branches, in ſhort cloſe Spikes or Cluſters, ſitting cloſe between the Leaves; they are ſmall, of a whitiſh green, and the female Flowers are ſucceeded by ſmall round Capſules incloſed by the woolly Empalement; they have 3 Cells, but ſeldom more than one of them contains Seed. It flowers in *July*, and the Seeds ripen about a Month after.

The 11th Sort riſes with a ſhrubby Stalk near 4 Feet high, dividing into many ſmall Branches, which have a ſilvery Bark, and are garniſhed with ſmall Heart-ſhaped Leaves, about 3 Quarters of an Inch long, and half as broad at their Baſe, ending in acute Points; theſe are woolly on both Sides, but their under Side is ſilvery, their upper Side of a yellowiſh green. The Flowers are produced in ſhort Spikes, they are ſmall, white, and have woolly Empalements. The female Flowers on the lower Part of the Spikes are ſucceeded by roundiſh Capſules with 3 Cells, each containing one Seed.

All theſe except the 1ſt, are Natives of warm Countries, ſo will not thrive in *England*, unleſs tenderly treated. They are all propagated by Seeds; thoſe which are annual perfect their Seeds in *England*, but the ſhrubby Sorts very rarely arrive to that Perfection, ſo their Seeds muſt be procured from the Countries where they naturally grow. The Seeds muſt be ſown on a hot Bed early in Spring, and when the Plants are fit to remove, they ſhould be each tranſplanted into a ſmall Pot, and plunged in a moderate hot Bed of Tanners Bark, where they ſhould be ſhaded from the Sun till they have taken freſh Root; then they muſt have Air admitted to them daily, in Proportion to the Warmth of the Seaſon; they muſt alſo be frequently refreſhed with Water, particularly the 2d, 3d, and 4th Sorts, which will often require Water, but the others ſhould have it more ſparingly. After the Plants are grown too tall to remain in the Frames, they ſhould be removed, either into the Stove, or a Glaſs-Caſe, where there is a hot Bed of Tanners Bark, into which the Pots ſhould be plunged, and there the annual Sorts will flower and perfect their Seeds; but the ſhrubby Kinds muſt be removed into the Bark Stove in Autumn, and during the Winter Seaſon ſhould have but little Water; the Stove ſhould be kept in a good Temperature of Heat, otherwiſe they will not live through the Winter in *England*.

As theſe Plants retain their Leaves all the Year, they make a pretty Variety in Winter, when intermixed with other Plants, whoſe Leaves are of different Forms and Colours from theſe.

CROWN IMPERIAL. *See* Petilium.

CRUCIANELLA. *Lin. Gen. Plant.* 118. *Rubeola. Tourn. Inſt. R. H.* 130. *Tab.* 50. Petty Madder.

The *Characters* are,

The Flower a hath two-leaved Empalement, which is rigid and compreſſed. It hath one Petal, with a ſlender cylindrical Tube, longer than the Empalement, and cut into 4 Parts at the Brim. It hath 4 Stamina ſituated in the Mouth of the Tube, terminated by ſingle Summits. It hath a compreſſed Germen, at the Bottom of the Tube, ſupporting a ſlender bifid Style, crowned by 2 obtuſe Stigmas.

The Germen become 2 *twin Capſules, each containing one oblong Seed.*

The *Species* are,

1. CRUCIANELLA *erecta, foliis ſenis linearibus. Hort. Upſal.* 27. Upright *Crucianella* with ſix narrow Leaves. This is the *Rubeola anguſtiore folio. Tourn. Inſt.* 130. Petty Madder with a narrower Leaf.

2. CRUCIANELLA *procumbens, foliis quaternis, lanceolatis, floribus ſpicatis. Hort. Upſal.* Trailing *Crucianella* with four Spear-ſhaped Leaves and ſpiked Flowers. *Rubeola latiore folio. Tourn.* Broad leaved Petty Madder.

3. CRUCIANELLA *procumbens, foliis quaternis, floribus ſubverticillatis. Lin. Sp. Plant.* 109. *Crucianella* with trailing Stalks, four Leaves at each Joint, and Flowers growing in Whorls. This is the *Rubeola maritima. C. B. P.* Maritime Petty Madder.

4. CRUCIANELLA *caule hiſpido, foliis lanceolatis hirſutis oppoſitis, floribus umbellatis terminalibus. Crucianella* with a prickly Stalk, Spear-ſhaped hairy Leaves placed oppoſite, and Flowers growing in Umbels at the Ends of the Branches. This is the *Rubeola Americana hirſuta, parietariæ foliis, floribus umbellatis purpureis. Houſt. Mſſ.* Hairy *American* Petty Madder with Pellitory Leaves and purple Flowers growing in Umbels.

5. CRUCIANELLA *foliis lineari-lanceolatis hirſutis oppoſitis, caule erecto villoſo, floribus ſolitariis alaribus. Crucianella* with narrow Spear-ſhaped hairy Leaves placed oppoſite, an erect hairy Stalk, and ſingle Flowers proceeding from the Sides of the Branches.

The 1ſt Sort grows naturally in the South of *France* and *Italy*; this is an annual Plant, which riſes with ſeveral upright Stalks a Foot high, which have 6 or 7 very narrow linear Leaves placed in Whorls, at each Joint. The Flowers grow in cloſe Spikes at the Top and from the Side of the Branches; theſe are ſmall, white, and not longer than the Empalement ſo make no great Appearance. It flowers in *June* and *July*, and the Seeds ripen in Autumn.

The 2d Sort grows in the Iſlands of the *Archipelago*, alſo about *Montpelier*; this is alſo an annual Plant, ſending out ſeveral branching Stalks from the Root, which lie proſtrate, and are garniſhed with 4 Spear-ſhaped Leaves at each Joint. The Flowers are produced in long Spikes at the Extremity of the Branches; theſe are very ſmall, ſo make no Appearance. It flowers about the ſame Time as the former.

The 3d Sort is like the 2d in the Appearance of Leaves and Stalks, but the Flowers grow on the Side of the Stalks, almoſt in Whorls, and make little Appearance. This grows naturally on the Borders of the Sea, in the South of *France* and *Italy*.

Theſe 3 Sorts are preſerved in ſome Gardens for Variety; if the Seeds are ſown on a Bed of light Earth in Spring, where they are deſigned to remain, they will require no other Culture, but to thin them where too cloſe, and keep them clean from Weeds; or if the Seeds are permitted to ſcatter, the Plants will come up in the Spring, and require no other Treatment.

The 4th Sort hath 4 cornered rough prickly Stalks, which bend downward, and are garniſhed with Spear-ſhaped Leaves, which are hairy and ſtand oppoſite; the Flowers are produced in ſmall Cluſters at the End of the Branches, which are blue, and cut into 4 Parts the Top; after theſe decay, they are ſucceeded by twin Capſules joined, in each of theſe is one oblong Seed.

The 5th Sort riſes with a ſhrubby branching Stalk, near 3 Feet high, garniſhed with narrow Spear-ſhaped Leaves, covered with ſtinging Hairs. The Flowers are produced from the Wings of the Leaves, on each Side the Stalk ſingly; theſe are of a pale blue Colour, and are ſucceeded by twin Fruit like the former.

Both theſe Sorts grow naturally at *La Vera Cruz* in *New Spain*, from whence the Seeds were ſent me by the late Dr. *Houſtoun*; and the Plants grew in the *Chelſea* Garden very well during the Summer Seaſon, but periſhed in the Autumn before their Seeds were ripe.

CRUCIATA. *See* Valantia.

CRUPINA BELGARUM. *See* Serratula.

CUCUBALUS. *Lin. Gen. Plant.* 502. *Tourn. Inſt. R. H.* 339. *Tab.* 176. Berry-bearing Chickweed.

The *Characters* are,

The Flower hath an oblong permanent Empalement of one Leaf, cut into 5 *Parts. It hath* 5 *Petals, with Tails as long as the Empalement, but ſpread open at the Top. It hath* 10 *Stamina,* 5 *of which are alternately inſerted in the Tail of the Petals; theſe are terminated by oblong Summits. In the Center is ſituated the oblong Germen, ſupporting* 3 *Styles, longer than the Stamina, crowned by oblong hairy Stigmas. The Empalement afterward becomes a pointed cloſe Capſule with* 3 *Cells, opening at the Top in* 5 *Parts, and filled with many roundiſh Seeds.*

The *Species* are,

1. CUCUBALUS *calycibus campanulatis, petalis diſtantibus, fructu colorato, ramis divaricatis. Lin. Sp. Plant.* 414. *Cucubalus* with a Bell-ſhaped Empalement, Petals ſtanding aſunder, a coloured Fruit, and divaricated Branches. This is the *Cucubalus Plinii. Lugd.* 1429. and the *Alſine ſcandens baccifera. C. B. P.* 250. Climbing Berry-bearing Chickweed.

2. CUCUBALUS *caulibus erectis glabris, calycibus ſubgloboſis, ſtaminibus corollâ longioribus. Cucubalus* with ſmooth erect Stalks, globular Empalements, and Stamina longer than the Petals. This is the *Lychnis ſylveſtris quæ behen album vulgò. C. B. P.* Wild *Lychnis*, or white Behen of the Shop, called Spatling Poppy.

3. CUCUBALUS *calycibus ſubgloboſis, caule ramoſo patulo, foliis linearibus acutis. Cucubalus* with globular Empalements, a branching ſpreading Stalk, and narrow pointed Leaves. This is the *Lychnis ſylveſtris quæ behen album vulgò, foliis anguſtioribus & acutioribus. C. B. P.* Wild *Lychnis*, with narrower pointed Leaves.

4. CUCUBALUS *calycibus ſubgloboſis glabris reticulato-venoſis, capſulis trilocularibus corollis ſubnudis. Flor. Suec. Cucubalus* with ſmooth globular Empalements which have netted Veins, Capſules having 3 Cells, and naked Petals. This is the *Lychnis Suecica behen album folio, habitu, calyce ampliſſimo: gumſepungar ſive ſcrotum arietis dicta. Boerh. Ind. alt. Swediſh Lychnis* with a white Behen Leaf and a large Empalement, called *Gumſepungar*.

5. CUCUBALUS *caulibus procumbentibus, calycibus ampliſſimis nervoſis, foliis lanceolatis. Cucubalus* with trailing Stalks, very large nervous Empalements, and Spear-ſhaped Leaves. This is the *Lychnis marina Anglica. Lob. Icon.* 337. *Engliſh* Sea *Lychnis*.

6. CUCUBALUS *caulibus procumbentibus, calycibus ampliſſimis reticulato venoſis, floribus pentagynis. Cucubalus*

with trailing Stalks, large netted veined Empalements, and Flowers having five Styles. This is the *Lychnis maritima Anglica amplioribus foliis. Act. Phil.* No. 399. *Engliſh* Sea *Lychnis* with larger Leaves.

7. CUCUBALUS *foliis obovatis carnoſis. Prod. Leyd.* 448. *Cucubalus* with oval fleſhy Leaves. This is the *Lychnis maritima ſaxatilis, folio anacampſerotis. Tourn. Cor.* 34. Rocky maritime *Lychnis* with an Orpine Leaf.

8. CUCUBALUS *floribus lateralibus decumbentibus, caule indiviſo, foliis baſi reflexis. Lin. Sp. Pl.* 414. *Cucubalus* with declining Flowers on the Sides of the Stalk, which is undivided, and Leaves reflexed at their Baſe. *Lychnis major noctiflora Dubrenſis perennis. Raii Hiſt.* 995. Greater perennial Night-flowering *Lychnis* of *Dover*.

9. CUCUBALUS *foliis quaternis. Hort. Upſal.* 110. Four leaved *Cucubalus.* This is the *Lychnis caryophyllæus Virginianus, gentianæ foliis glabris quatuor ex ſingulis geniculis caulem amplexantibus flore amplo fimbriato. Raii Hiſt.* 1895. *Virginia* Clove *Lychnis,* with ſmooth Gentian Leaves, four at each Joint embracing the Stalk, and a large fringed Flower.

10. CUCUBALUS *calycibus ſtriatis acutis petalis bipartitis, caule paniculato, foliis linearibus. Cucubalus* with ſtriated acute Empalements, Petals divided in two Parts, a paniculated Stalk, and narrow Leaves. This is the *Lychnis noctiflora anguſtifolia odorata. Tourn. Inſt.* Narrow leaved ſweet-ſcented Night-flowering *Lychnis.*

11. CUCUBALUS *floribus dioicis, petalis ſetaceis indiviſis. Hort. Cliff.* 272. *Cucubalus* with male and female Flowers on different Plants, and briſtly undivided Petals, This is the *Lychnis viſcoſa, flore muſcoſo. C. B. P.* 206. Viſcous *Lychnis* with a moſſy Flower.

12. CUCUBALUS *acaulis. Flor. Lapp.* 184. *Cucubalus* without Stalk. This is the *Lychnis Alpina pumila, folio gramineo, ſive muſcus Alpinus Lychnidis flore. C. B. P.* 206. *Alpine* Dwarf *Lychnis* with a graſſy Flower, or *Alpine* Moſs with a Flower of *Lychnis.*

13. CUCUBALUS *petalis bipartitis, floribus paniculatis, ſtaminibus longis, foliis lanceolatis acutis. Cucubalus* with bifid Petals, Flowers growing in Panicles, long Stamina, and Spear-ſhaped acute Leaves. This is the *Lychnis altiſſima, ocymaſtri facie, flore muſcoſo. Trumfet.* Talleſt *Lychnis* with the Appearance of Wild Campion.

14. CUCUBALUS *foliis radicalibus ovatis acutis, caulinis lanceolatis oppoſitis, floribus paniculatis erectis. Cucubalus* with lower Leaves oval and pointed, thoſe on the Stalks Spear-ſhaped and oppoſite, and Flowers growing in Panicles which are erect.

15. CUCUBALUS *petalis bipartitis, caule paniculato, foliis radicalibus ovato-lanceolatis caulinis linearibus. Cucubalus* with Petals divided in two Parts, a paniculated Stalk, whoſe lower Leaves are oval and Spear-ſhaped, and thoſe on the Stalks very narrow.

The 1ſt Sort grows naturally in *France, Germany,* and *Italy,* in ſhady Places, and is ſeldom kept in Gardens, unleſs for Variety; it ſends out many climbing Stalks, which grow 4 or 5 Feet high, where they meet with Support, otherwiſe they trail on the Ground; theſe Stalks ſend out Side Branches by Pairs, oppoſite, at each Joint; the Leaves are like thoſe of Chickweed, and are placed oppoſite. The Flowers come out ſingle at the End of the Branches, which have large inflated Empalements; they conſiſt of 5 Petals, which are white, and placed at a Diſtance from each other; theſe are ſucceeded by oval Berries, which, when ripe, are black and full of Juice, incloſing ſeveral flat ſhining Seeds. It flowers in *June,* and the Seeds ripen in Autumn. This hath a perennial creeping Root, whereby it is apt to multiply too faſt in Gardens. It delights in Shade, and will thrive in almoſt any Soil.

The 2d Sort grows naturally in moſt Parts of *England,* where it is generally called Spatling Poppy. This ſtands in the Catalogue of medicinal Plants, under the Title of *Behen album*; the Roots are ſometimes uſed and are accounted cordial, cephalick, and alexipharmick, It hath a perennial Root, which ſtrikes deep into the Ground, ſo are not eaſily deſtroyed by the Plough, therefore it is frequently ſeen growing in Bunches among Corn. It is a rambling Weed, ſo is never cultivated.

The 3d Sort grows naturally on the *Alps*; this differs from the former, in having much longer and narrower Leaves, and the Stalks being more divided and ſpreading, nor do the Roots creep under Ground like that. Theſe Differences are conſtant, for I have ſown it above 20 Years, and never found it vary.

The 4th Sort grows naturally in *Sweden,* and other northern Countries, where it paſſes for the common Sort; but although it is there ſo, yet is very different from the 2d here mentioned, which is the Sort that grows common in moſt other Parts of *Europe.* The Stalks of this are much larger, the Leaves longer and more pointed; the Empalement of the Flower is curiouſly veined like Net Work, of a purpliſh Colour, whereas that of our common Sort is plain. Theſe Differences are laſting, when the Plants are cultivated in a Garden.

The 5th Sort grows naturally on the Borders of the Sea, in many Parts of *England.* This is by ſome ſuppoſed to be the ſame as the 2d Sort, from which it greatly differs; the Stalks of this are weak, and trail on the Ground; the Leaves are ſhorter, thoſe on the Stalks much broader, and the Empalement of the Flowers netted with purple Veins like the *Swediſh* Sort before mentioned. I have cultivated this Plant in the Garden more than 30 Years, and have never found it vary.

The 6th Sort was found growing naturally in ſome Parts of *England.* This differs from the laſt, in having much longer trailing Stalks, larger Leaves, the Petals of the Flower are more than twice the Size of thoſe, and the Flowers have Styles. All theſe Sorts have perennial Roots, and multiply too faſt, therefore are only admitted into Botanick Gardens for Variety.

The 7th Sort was diſcovered by *Tournefort* in the *Levant,* who ſent the Seeds to the Royal Garden at *Paris.* This puts out many oval thick ſucculent Leaves near the Ground, out of the Middle of which, ariſes an upright Stalk, about 15 Inches high, the lower Part of which is garniſhed with Leaves of the ſame Form and Conſiſtence as the lower, but are ſmaller; theſe are placed oppoſite by Pairs; the upper Part of the Stalk divided into two ſmaller, on which ſtand a few ſmall herbaceous Flowers at each Joint. It flowers in *June,* and ſometimes ripens Seeds in Autumn. The Plant is biennial, generally periſhing when it has produced Seeds; but unleſs it is ſown upon a very dry Rubbiſh, in a warm Situation, the Plants will not live through the Winter in *England*; for when they are in good Ground, they grow large, and are ſo replete with Moiſture, as to be affected by the firſt Froſt in Autumn; but where they have grown on an old Wall, I have known them eſcape, when all thoſe in the Ground were killed.

The 8th Sort grows naturally on the Cliffs near *Dover*. This hath a perennial Root, from which ariſes a ſingle Stalk about a Foot high, garniſhed with long narrow Leaves placed oppoſite; the Flowers are produced from the Side of the Stalks, each Foot Stalk ſuſtaining 3 Flowers; the Foot Stalks come out by Pairs oppoſite, the Empalement of the Flower is long and ſtriped, the Flowers are of a pale red. Theſe appear in *June*, and the Seeds ripen in Autumn.

The 9th Sort grows naturally in *Virginia*, and ſeveral other Parts of *North America*. This hath a perennial Root, from which ariſes 2 or 3 ſlender upright Stalks a Foot high, their lower Part being garniſhed with 4 Leaves at each Joint, placed in Form of a Croſs; theſe are ſmooth, of a deep green, about an Inch and a Half long, and half an Inch broad near their Baſe, terminating in acute Points; the Joints of the upper Part of the Stalk are garniſhed with white fringed Flowers, ſtanding ſingle upon pretty long Foot Stalks, which come out by Pairs oppoſite. The Flowers appear in *June*, and in warm Seaſons the Seeds will ripen in *England*.

The 10th Sort grows naturally in *Spain* and *Italy*. This is a perennial Plant, which riſes with an upright branching Stalk a Foot and a Half high, garniſhed with very narrow Leaves placed oppoſite; the upper Part of the Stalk is very branching; ſome of theſe Branches are long, and others ſhort; the Flowers ſtand on long naked Foot Stalks, each ſupporting 3 or 4 Flowers, which have long Tubes, with ſtriped Empalements; the Petals are large, and deeply divided at Top; they are of a pale bluiſh Colour. Theſe Flowers are cloſed all Day, but when the Sun leaves them, they expand, and then they have a very agreeable Scent. This Sort may be propagated by Seeds, which ſhould be ſown in Spring, upon a Bed of light Earth; when the Plants are fit to remove, they ſhould be planted in a Nurſery Bed, at about 4 Inches Diſtance, where they may remain till Autumn, when they may be planted in the Borders of the Flower Garden, where they are deſigned to remain. The following Summer theſe will produce Flowers, and ripen their Seeds in Autumn; but the Roots will continue ſeveral Years, provided they are not planted in rich Ground, where they are very ſubject to rot in Winter.

The 11th Sort grows naturally in *Auſtria*, *Sileſia*, and *Italy*. This Sort is male and female in different Plants; it hath a thick fleſhy perennial Root, which ſtrikes deep into the Ground, ſending out many oblong Leaves, which are broad at their Extremity, but contract narrower to their Baſe; from between theſe ariſe the Stalks, which in the male Plants often grow near 4 Feet high, but thoſe of the female Plants are ſeldom above half ſo high; the Stalks are garniſhed with narrow Leaves placed oppoſite at each Joint, where there exudes a viſcous clammy Juice, which ſticks to the Fingers when handled; and the ſame Inſects which ſettle upon thoſe Parts of the Stalks, are thereby faſtened ſo as not to get looſe again. The Flowers of the male Plants are produced in looſe Spikes from the lower Joints of the Stalk; but on the upper Part, they ſtand on ſingle Foot Stalks in Cluſters quite round the Stalks; theſe are ſmall, of a greeniſh Colour, and have each 10 Stamina. The female Plants have 3 or 4 Flowers growing on each Foot Stalk, which ariſe from the Side of the Stalk. Theſe are ſucceeded by oval Seed Veſſels, containing many ſmall Seeds. Theſe flower in *June*, and the Seeds ripen in Autumn. This is propagated by Seeds, which ſhould be ſown where the Plants are deſigned to remain; for as they ſend out long Tap Roots, they do not bear tranſplanting, unleſs it is performed while the Plants are young. The Plants are very hardy, ſo will thrive in any Soil or Situation, but agree beſt with a dry Soil. It is neceſſary to have ſome Plants among the female, to have perfect Seeds.

The 12th Sort grows naturally on the *Alps*, and upon ſome Hills in the North of *England* and *Wales*. This is a very low Plant, with ſmall Leaves, which ſpread on the Ground, and have the Appearance of Moſs; the Flowers are ſmall, erect, and rarely riſe more than half an Inch high; they are of a dirty white Colour, and appear in *May*. This is perennial, and will not thrive but in a moiſt Soil and a ſhady Situation.

The 13th Sort grows naturally in *Italy* and *Sicily*. This is a perennial Plant, with large thick Roots, ſending out many long Spear-ſhaped Leaves near the Root; between theſe ariſe round viſcous Stalks, which grow 3 Feet high, garniſhed at each Joint by 2 long narrow Leaves ending in acute Points. The Stalks branch out into many Diviſions, on the upper Parts of which the Foot Stalks of the Flowers ariſe from each Joint by Pairs oppoſite; each of theſe ſuſtain 3 or 4 Flowers of an herbaceous Colour, whoſe Petals are divided into 2 Parts; the Flowers appear in *June*, and the Seeds ripen in Autumn. This is propagated by Seeds, as the 11th.

The 14th Sort grows naturally in *Spain*; this is a biennial Plant, which decays ſoon after it hath perfected Seeds; it hath many oval pointed Leaves near the Root, ſtanding on long Foot Stalks; between theſe ariſe an upright Stalk, ſending out 2 Side Branches at each Joint, placed oppoſite; under each of theſe is ſituated one Spear-ſhaped Leaf, ending in an acute Point; theſe Side Branches, and alſo the upright Stalk, are terminated by whitiſh Flowers, formed into a Panicle, and ſtanding erect; theſe appear in *June*, and are ſucceeded by Seeds, which ripen in Autumn. This is propagated by Seeds, which may be ſown on an open Border where the Plants are to remain, and require no Culture but to keep them clear from Weeds.

The 15th Sort grows naturally in *Italy*, from whence I received the Seeds; this is a perennial Plant, which hath many oval, Spear-ſhaped Leaves near the Root; the Stalks riſe about 2 Feet high, they are viſcous, and from each Joint comes out 2 Side Branches under which are ſituated 2 very narrow Leaves; the Stalks ſpread out and form a Sort of Panicle, and are terminated by Cluſters of greeniſh Flowers, whoſe Petals are divided into 2 Parts. This flowers in *June*, and the Seeds ripen in Autumn. It is propagated as the 11th Sort, and requires the ſame Treatment.

CUCULLATE PLANTS are ſo called, of *Cuculla*, Lat. a Hood or Cowl, ſuch as Monks wear, becauſe their Flowers reſemble it.

CUCUMIS. Cucumber; in French *Concombre*.

The *Characters* are,

It hath male and female Flowers placed at Diſtances on the ſame Plant, theſe have a Bell-ſhaped Empalement of one Leaf, whoſe Border is terminated by 5 Briſtles. The Flowers are Bell-ſhaped, have one Petal which adheres to the Empalement, and is cut into 5 oval rough Segments. The male Flowers have 3 ſhort Stamina, which are inſerted to the Empalement, two of which have bifid Tops. Theſe are terminated by very narrow Summits or Lines, which run upward and downward, and adhere to the Outſide. The female Flowers have no Stamina but have 3 ſmall pointed Filaments without Summits. The Germen which is oblong, is ſituated under the Flower ſupporting a ſhort cylindrical Style, crowned by 3 thick convex Stigmas, which are bipartite. The Germen afterward becomes an oblong fleſhy Fruit with three Cells including many oval flat pointed Seeds.

The *Species* are,

1. CUCUMIS *foliorum angulis rectis, pomis oblongis ſcabris. Hort. Cliff.* 451. Cucumber with Leaves having right Angles, and an oblong rough Fruit. This is the *Cucumis ſativus vulgaris. C. B. P.* 310. The common Garden Cucumber.

2. CUCUMIS *foliorum angulis rectis, pomis longiſſimis glabris.* Cucumber with Leaves having right Angles, and a very long ſmooth Fruit. This is the *Cucumis flexuoſus. C. B. P.* 310. The long *Turkey* Cucumber.

3. CUCUMIS *foliis rotundato-angulatis, pomis acutangulis. Lin. Sp. Plant.* 1011. Cucumber with round, angular Leaves, and a Fruit having acute Angles. This is the *Cucumis Ægyptius rotundifolius. Tourn. Inſt.* 104. Round leaved *Ægyptian* Cucumber, called *Chate*.

The 1ſt Sort is the Cucumber generally cultivated for the Table, and is ſo well known as to need no Deſcription. The 2d Sort is the long *Turkey* Cucumber, which is alſo pretty well known in *England*. The Stalks and Leaves of this Sort are much larger than thoſe of the common Sort. The Fruit is generally twice the Length, and hath a ſmooth Rind; this is undoubtedly different from the common Sort, for I have cultivated it above 30 Years, and have not found it alter. There are green and white Fruit of this Sort, which differ but little except in their Colour, ſo I have not diſtinguiſhed them as diſtinct Species; though I have alſo found them keep their Difference from Seeds. The white is leſs watery than the green, ſo is generally better eſteemed. I have alſo received Seeds from *China* of another Sort, with a much longer Fruit, than the *Turkey*, but I have found this will degenerate in Time, and become more like the common Sort.

In *Holland* they cultivate a long white prickly Cucumber only, which is very different from the *Turkey* Cucumber, being near as rough as the common Sort, but this is not ſo hardy as our common Sort, ſo is not cultivated in *England*, but the Fruit is not ſo watery or full of Seeds as the common.

The 3d Sort is rarely cultivated but in Botanick Gardens, the Fruit being very indifferent, and the Plants being tender, require a good Heat to bring them to Perfection in *England*; theſe Plants ramble very far, ſo muſt have much Room, and are not very fruitful.

The common Sort is cultivated in 3 different Seaſons: The 1ſt of which is on hot Beds under Garden Frames, for early Fruit; the 2d under Bell or Hand Glaſſes, for the middle Crop; and the 3d in the common Ground, for a late Crop, or to pickle.

I ſhall begin with giving Directions for raiſing Cucumbers early, which is what moſt Gentlemens Gardeners have an Emulation to exceed each other in; and ſome have been at the Pains and Expence to have ripe Fruit in every Month of the Year; which is rather a Curioſity than any real Advantage; for Cucumbers that are produced before *April* cannot be ſo wholeſome as thoſe that are later; for before the Sun hath Strength enough to warm the Beds through the Glaſſes in the Day Time, all the Heat muſt proceed from the Fermentation of the Dung, which muſt occaſion a very conſiderable Steam, and the Air being pent up in the hot Bed, ſoon becomes rancid; and the Steam of the Bed being by the Cold of the Night condenſed into large Drops of Water, theſe, being abſorbed or inſpired by the Plants, make the Fruit crude and unhealthy, eſpecially when the Nights are very long. This, together with the great Expence and Trouble of procuring them earlier, having in ſome Meaſure got the better of Peoples Ambition, ſo that this is leſs practiſed than it hath been ſome Years ſince, but as there are many Perſons, who yet value themſelves on their Skill, in raiſing early Cucumbers, we may probably be cenſured for Deficiency in what they call an eſſential Part of Gardening, ſhould we omit the Method practiſed for raiſing theſe Fruit early in the Year. Therefore ſhall proceed to give ſuch Directions, as if carefully attended to. will not fail of Succeſs.

Thoſe Perſons who are very deſirous to have early Cucumbers, generally ſow their Seeds before *Chriſtmas*, but the Generality of Gardeners commonly put their Seeds into the hot Bed about *Chriſtmas*. Where you have the Conveniency of a Stove for raiſing theſe Plants, it is attended with leſs Trouble than a common hot Bed, and is a much ſurer Method, becauſe the Plants will have a much greater Share of Air, which will alſo be leſs mixed with damp or rancid Vapours, for by the Heat of the Fires, theſe will be diſſipated, and the Temperature of the Air is kept more equal than can be done with all poſſible Care in a hot Bed, at a Seaſon when we enjoy but little Sun; therefore where there is this Convenience, the Seeds ſhould be ſown in ſmall Pots, filled with light dry Earth and plunged into the Tan Bed, in the warmeſt Part of the Stove. The Pots with Earth ſhould be plunged 3 or 4 Days before the Seeds are ſown, that the Earth may be properly warmed to receive them; the Seeds ſhould be at leaſt 3 or 4 Years old, but if older, provided it will grow, it will be the better; if the Seeds are good, the Plants will begin to appear in about a Week or nine Days, at which Time there muſt be as many Halfpenny Pots filled with dry light Earth, as there are Plants deſigned for planting (always allowing for Loſs; ſo that where 24 Plants are wanting, there ſhould be 30 raiſed); theſe Pots ſhould be plunged into the Bark Bed, that the Earth may be warmed to receive the Plants, which ſhould be pricked into theſe Pots, as ſoon as the two firſt Leaves are raiſed above Ground;

into each of theſe Pots, may be two or three Plants pricked, but when they have taken Root, and are ſafe, one or two of the worſt ſhould be drawn out, being careful not to diſturb the Roots of thoſe which are left. If the Plants are deſigned to be ſoon ridged out, there may be two left in each Pot; but when they are to remain ſome Time before they are put out for good, there ſhould but one Plant be left in the Pots. In the Management of theſe Plants there muſt be great Care taken, not to give them too much Water, and it will be very proper to put the Water into the Stove, ſome Hours before it is uſed, that the Cold may be taken off, but there muſt be Caution uſed, not to make it too warm, for that will deſtroy the Plants; they muſt alſo be guarded from the Moiſture which frequently drops from the Glaſſes of the Stove, which is very deſtructive to theſe Plants while young; as theſe Plants muſt not be kept too long in the Stove leſt they become troubleſome to the *Ananas*, ſo there ſhould be a proper Quantity of new Dung prepared for making a hot Bed to receive them; this muſt be in Proportion to the Quantity of Holes or Plants intended: For a middling Family 6 or 9 Lights of Cucumbers will be ſufficient, and for a large one double the Quantity; but the Beds where they are deſigned to remain, need not be made ſo ſoon, but rather a ſmall Bed of two Lights, in which the Plants may be trained up, till they have acquired a greater Share of Strength; and for this Bed, three good Cart Loads of Dung will be ſufficient. This ſhould be new, and not too full of Straw, nor ſhould it want a proper Portion, this ſhould be well mixed together and thrown in a Heap mixing ſome Sea Coal Aſhes with it; after it hath lain in a Heap a few Days, and has fermented, it ſhould be carefully turned over and mixed, laying it up again in a Heap, and if there is a great Share of Straw in it, there may be a Neceſſity for turning it over a third Time after having lain a few Days; this will rot the Straw and mix it thoroughly with the Dung, ſo there will be leſs Danger of its burning afterward when the Bed is made, which ſhould be done, when the Dung is in proper Order. The Place where the hot Bed is made ſhould be well ſheltered by Reed Hedges, and the Ground ſhould be dry; then there ſhould be a Trench made in the Ground, of a proper Length and Breadth, and a Foot deep at leaſt; into which the Dung ſhould be wheeled and carefully ſtirred up and mixed, ſo that no Part of it ſhould be left unſeparated, for where there is not this Care taken, the Bed will ſettle unequally; there ſhould alſo be great Care taken to beat the Dung down cloſe in every Part of the Bed alike; when the Bed is made, the Frame and Glaſſes ſhould be put upon it to keep out the Rain, but there ſhould be no Earth laid upon the Dung, till 2 or 3 Days after, that the Steam of the Dung may have Time to evaporate: If there ſhould be any Danger of the Bed burning, it will be proper to lay ſome ſhort old Dung, or ſome Neats Dung, over the Top of the hot Dung about 2 Inches thick, which will keep down the Heat, and prevent the Earth from being burnt; after this there ſhould be a ſufficient Number of three Farthing Pots placed upon the Bed, filled with light dry Earth, and all the Interſtices between them, filled up with any common Earth: In two or three Days, the Earth in theſe Pots will be of a proper Temperature of Warmth to receive the Plants, which ſhould be then turned out of the Halfpenny Pots, preſerving the Ball of Earth to their Roots, and planted into the three Farthing Pots; then a little Water ſhould be given them to ſettle the Earth about their Roots, being careful not to give them too much Wet, and as theſe will have ſuch large Balls of Earth to their Roots, they will not feel their Movement, therefore will not require ſhading from the Sun; but the Glaſſes ſhould be raiſed up a little, on the contrary Side from the Wind, to let the Steam of the Bed paſs off, and they ſhould be frequently turned in the Day Time, that the Wet occaſioned by the Steam, may be dried, otherwiſe the Moiſture will fall on the Plants, which will be very injurious to them. If the Bed ſhould heat too violently, ſo as to endanger ſcalding the Roots of the Plants, the Pots may be raiſed ſo as to allow of a little Hollow at their Bottoms, which will effectually prevent it; and as the Heat declines, ſo the Pots may be ſettled down again: The Glaſſes of the hot Bed ſhould be well covered with Mats every Night to keep the Bed in a proper Temperature of Heat, and great Care muſt be taken to admit freſh Air every Day to the Plants, to guard againſt the cold Winds, which uſually blow at that Seaſon; ſo that a Mat, or Canvaſs ſhould be hung over the Opening made by raiſing the Glaſſes, to prevent the cold Air from ruſhing in too violently, and the Glaſſes ſhould always be raiſed on that Side which is contrary to the Wind. The Plants will alſo require to be frequently watered, but it muſt be cautiouſly given them at this Seaſon, and the Water ſhould not be cold, but either placed in a Stove, or put into a warm Heap of Dung, to take off the Chill from it, before it is uſed.

If the Weather ſhould prove bad, and the Heat of the Bed decline, there ſhould be ſome hot Dung laid round the Sides of the Bed to renew the Heat, which muſt not be ſuffered to fail, for as the Plants have been tenderly brought up, ſo they muſt not ſuffer from Cold, for that will ſoon deſtroy them.

In this Bed the Plants may remain about three Weeks, in which Time if they have been properly managed, they will have obtained ſufficient Strength to put out for good, therefore a proper Quantity of Dung ſhould have been mixed and turned ready for making the Beds. The uſual Quantity allowed for the Beds at this Seaſon, is one good Cart Load, to each Light; this ſhould be well mixed and turned over in the Manner before directed, then a Trench ſhould be dug in the Ground, of the Length and Width of the intended Bed, into which the Dung ſhould be wheeled, and properly worked according to the above Directions, and ſome old Dung, or Neats Dung ſpread over the Top; the Frames and Glaſſes ſhould then be put on the Bed, which ſhould be raiſed every Day to let the Steam of the Dung paſs off, and in about three Days the Bed will be in a proper Temperature of Heat to receive the Plants; at which Time the Dung ſhould be covered over with dry Earth about two Inches thick, and in the Middle of the Bed, it ſhould be an Inch thicker, this ſhould be laid upon the Dung, at leaſt twenty-four Hours before the Plants are removed into the Bed, that the Earth may be properly warmed; then the Plants ſhould be carefully ſhaken out of the Pots, preſerving all the Earth to their Roots, and placed on the Top of the Earth in the Middle of the Bed.

Three of theſe Plants will be ſufficient for each Light, and theſe ſhould be placed at about 7 or 8 Inches aſunder, not all their Roots together as is too often practiſed. When the Plants are thus ſituated in the Bed, the Earth which was laid an Inch thicker in the Middle of the Bed, ſhould be drawn up round the Ball which remained to the Roots of the Plants, into which their Roots will ſoon ſtrike; there ſhould always be a Magazine of good Earth laid under Cover to keep it dry, for earthing theſe Beds, for if it is taken up wet, it will chill the Beds, and occaſion great Damps, therefore it is quite neceſſary to have a ſufficient Quantity of Earth prepared long before it is uſed. When the Plants are thus ſettled, they muſt have proper Air and Water, according as they may require, being careful not to admit too much cold Air, or give too much Water; the Glaſſes ſhould alſo be well covered with Mats every Night, to keep up the Warmth of the Bed, and ſome freſh Earth ſhould be put into the Bed at different Times, which ſhould be laid at ſome Diſtance from the Roots of the Plants, till it is warmed, and then ſhould be drawn up round the Heap of Earth in which the Plants grow, to increaſe the Size; this ſhould be raiſed to the full Height of the former Ball, that the Roots of the Plants may more eaſily ſtrike into it; by this Method of ſupplying the Earth, the whole Surface of the Beds will be covered 9 or 10 Inches with Earth, which will be of great Service to the Roots of the Plants, for where the Earth is very ſhallow, the Leaves of the Plants will always hang in the Heat of the Day unleſs they are ſhaded; and the Plants will require more Water to keep them alive, than is proper to give them; therefore it will be found much the better Way to allow a proper Depth of Earth to the Beds: But the Reaſon of not laying the Quantity of Earth on the Bed when it is firſt made, is that the Dung ſhould not be too much chilled by it, or that the Earth may not be burned, which might be endangered, were the whole Thickneſs to be laid on at once; beſides, by thus gradually applying the Earth, it will be freſh, and much better for the Roots of the Plants, than that which has been long on the Bed, and has been too much moiſtened by the Steam ariſing from the Dung.

If the Heat of the Bed ſhould decline, there ſhould be ſome hot Dung laid round the Side of the Bed to renew the Heat, for if that ſhould fail at the Time when the Fruit appears, they will fall off and periſh, therefore this muſt be carefully regarded; and when the Plants have put out Side Branches (which the Gardeners call Runners) they ſhould be properly placed, and pegged down with ſmall forked Sticks to prevent their riſing up to the Glaſſes, and alſo from croſſing and entangling with each other, ſo that when they are properly directed at firſt, there will be no Neceſſity of twiſting and tumbling the Plants afterward, which is always hurtful to them.

When the Earth of the Bed is laid the full Thickneſs, it will be neceſſary to raiſe the Frames, otherwiſe the Glaſſes will be too cloſe to the Plants, but when this is done, there muſt be Care taken to ſtop the Earth very cloſe round the Sides of the Frame, to prevent the cold Air from entering under them. The Watering and admitting freſh Air muſt be diligently attended to, otherwiſe the Plants will be ſoon deſtroyed, for a little Neglect either of admitting Air, or letting in too much, or by over watering, or ſtarving the Plants, will very ſoon deſtroy them paſt Recovery.

When the Fruit appears upon the Plants, there will alſo appear many male Flowers on different Parts of the Plant, theſe may at firſt Sight be diſtinguiſhed; for the female Flowers have the young Fruit ſituated under the Flowers, but the male have none, but theſe have three Stamina in their Center with their Summits which are loaded with a golden Powder, this is deſigned to impregnate the female Flowers; and when the Plants are fully expoſed to the open Air, the ſoft Breezes of Wind convey this Farina or male Powder from the male to the female Flowers, but in the Frames, where the Air is frequently too much excluded at this Seaſon, the Fruit often drops off for Want of it: And I have often obſerved the Bees that have crept into the Frames when the Glaſſes have been raiſed to admit the Air, have ſupplied the Want of thoſe gentle Breezes of Wind; by carrying the Farina of the male Flowers on their hind Legs into the female Flowers, where a ſufficient Quantity of it has been left to impregnate them. For as the Bees make their Wax of the Farina or male Powder of Flowers, ſo they ſearch all the Flowers indifferently to find it; and I have obſerved them come out of ſome Flowers with their hind Legs loaded with it, and going immediately into other Flowers which have none, they have ſcattered a ſufficient Quantity of this Farina about the Style of the female Flowers to impregnate and render them prolifick. Theſe Inſects have taught the Gardeners a Method to ſupply the Want of free Air, which is ſo neceſſary for the Performance of this in the natural Way; this is done by carefully gathering the male Flowers, at the Time when this Farina is fully formed, and carrying them to the female Flowers, turning them down over them, and with the Nail of one Finger gently ſtriking the Outſide of the male, ſo as to cauſe the Powder on the Summits to ſcatter into the female Flowers, and this is found to be ſufficient to impregnate them, ſo that by practiſing this Method, the Gardeners have now arrived at a much greater Certainty than formerly to procure an early Crop of Cucumbers and Melons, and by this Method the Floriſts have arrived to greater Certainty of procuring new Varieties of Flowers from Seeds, which is done by mixing the Farina of different Flowers with each other.

When the Fruit of the Cucumbers are thus fairly ſet, if the Bed is of a proper Temperature of Warmth, they will ſoon ſwell, and become fit for Uſe, ſo all that is neceſſary to be obſerved, is to water the Plants properly, which ſhould be done, by ſprinkling the Water all over the Bed; for the Roots of the Plants will extend themſelves to the Side of the Beds; therefore thoſe who are inclined to continue theſe Plants as long as poſſible in Vigour, ſhould add a ſufficient Thickneſs of Dung and Earth all round the Sides of the Beds, ſo as to enlarge them to near double their firſt Width; this will ſupply Nouriſhment to the Roots of the Plants, whereby they may be continued fruitful great Part of the Summer; whereas, when this is not practiſed, the Roots of the Plants, when they have reached the Side of the Beds, are dried by the Wind and Sun, ſo that the Plants languiſh and decay long before their Time.

Thoſe Gardeners, who are fond of producing early Cucumbers, generally leave 2 or 3 of their early Fruit, which are ſituated upon the main Stem of the Plant near the Root for Seed, which, when fully ripe, they carefully ſave to a proper Age for Sowing, and by this Method they find a great Improvement is made of the Seed, and this they always uſe for their early Crops only, for the ſucceeding Crops do not deſerve ſo much Care and Attention.

I have here only mentioned the Method of raiſing the young Cucumber Plants in Stoves, for as theſe Conveniencies are now generally made in curious Kitchen Gardens in moſt Parts of *England*, ſo this Method may be more univerſally practiſed; but in ſuch Gardens where there are no Stoves, the Seeds ſhould be ſown upon a well prepared hot Bed; and here it will be the beſt Way to ſow the Seeds in ſmall Halfpenny Pots, becauſe theſe may be eaſily removed from one Bed to another if the Heat ſhould decline, or, on the contrary, if the Heat ſhould be too great, the Pots may be raiſed up, which will prevent the Seed or the young Plants from being injured thereby. When the Plants are come up as was before directed, there ſhould be a freſh hot Bed prepared, with a ſufficient Number of Halfpenny Pots plunged therein ready to receive the Plants, which muſt be planted into them in the ſame Manner as was before directed; and the After-management of the Plants muſt be nearly the ſame; but as the Steam of the hot Bed frequently occaſions great Damps, there muſt be great Care to turn and wipe the Glaſſes frequently, to prevent the condenſed Moiſture falling on the Plants, which is very deſtructive to them. There muſt alſo be great Attention to the admitting freſh Air at all proper Times, as alſo to be careful in keeping the Bed to a proper Temperature of Heat, for as there is a Want of Fire to warm the Air, ſo that muſt be ſupplied by the Heat of Dung, afterward theſe Plants muſt be ridged out, in the ſame Manner as before directed.

If the Bed is of a good Temper for Heat, your Plants will take Root in leſs than 24 Hours; after which Time you muſt be careful to let in a little Air, at ſuch Times when the Weather will permit, and alſo to turn the Glaſſes upſide down every Day to dry; for the Steam of the Bed, condenſing on the Glaſſes, will fall down upon the Plants, and be very injurious to them; and therefore whenever the Weather is ſo bad as not to permit the Glaſſes to lie turned long, you ſhould at leaſt turn them once or twice a Day, and wipe off the Moiſture with a woollen Cloth; but you muſt alſo be very careful how you let in too much cold Air, which is eqnally deſtructive to the tender Plants; therefore, to avoid this, it is a very good Method to faſten before the upper Side of the Frame, where the Air is ſuffered to enter the Bed, a Piece of coarſe Cloth, or a Mat, ſo that the Air which enters may paſs through that, which will render it leſs injurious to your Plants.

You muſt alſo be very cautious in giving Water to the Plants while young; and whenever this is done, it ſhould be ſparingly, and the Water ſhould be placed either into a Heap of Dung, or in ſome other warm Place, for ſome Time before it is uſed, ſo as to be nearly of a Temperature for Warmth with the incloſed Air of the hot Bed; and as the Plants advance in Height, you ſhould have a little dry ſifted Earth always ready to earth up their Shanks, which will greatly ſtrengthen them. You muſt alſo be very careful to keep up the Heat of the Bed; which, if you ſhould find decline, you muſt lay a little freſh Litter round about the Sides of it and keep the Glaſſes well covered in the Nights, or in bad Weather; but if, on the other Hand, your Bed ſhould prove too hot, you ſhould thruſt a large Stake into the Side of the Dung in 2 or 3 Places, almoſt to the Middle of the Bed, which will make large Holes, through which the greateſt Part of the Steam will paſs off without aſcending to the Top of the Bed; and when you find it has anſwered your Purpoſe by ſlacking the Heat of your Bed, you muſt ſtop them up again with Dung.

Theſe Directions, if carefully attended to, will be ſufficient for raiſing the Plants in the firſt Bed; you muſt therefore, when you perceive the third, or rough Leaf begin to appear, prepare another Heap of freſh Dung, which ſhould be mixed with Aſhes, as before directed; this ſhould be in Quantity according to the Number of Holes you intend to make. The common Allowance for ridging out the earlieſt Plants is, one Load to each Light, or Hole, ſo that the Bed will be near 3 Feet thick in Dung, but for ſuch as are not ridged out till *March*, 2 Loads of Dung will be ſufficient for 3 Holes, for I could never obſerve any Advantage in making theſe Beds ſo thick with Dung as ſome People do; their Crops are ſeldom better, if ſo good, as thoſe which are of a moderate Subſtance; nor are they forwarder, and the Fruit is rarely ſo fair, nor do the Vines continue ſo long in Health.

In making theſe Beds, you muſt carefully mix the Dung, ſhaking it well with the Fork, ſo as not to leave any Clods unſeparated, as alſo to beat it down pretty cloſe, to prevent the Steam from riſing too haſtily; you muſt alſo be careful to lay it very even, and to beat, or preſs down the Dung equally in every Part of the Bed, otherwiſe it will ſettle in Holes, which will be very hurtful. When you finiſh laying the Dung, you muſt make a Hole exactly in the Middle of each Light, about a Foot deep, and 8 or 9 Inches over; theſe Holes muſt be filled with light freſh Earth, which ſhould be ſcreened to take out all large Stones, Clods, *&c.* laying it up in an Hill; and in the Middle of each, thruſt in a Stick about 18 Inches long, which ſhould ſtand as a Mark to find the exact Place where the Hole is; then earth the Bed all over about 3 Inches thick, leveling it ſmooth, and afterwards ſet the Frame upon it, covering it with Glaſſes; but if there is any Apprehenſion of the Dung heating too violently, the Earth ſhould not be laid upon the Bed until the Heat is ſomewhat abated, which will be in a few Days, and then the Earth may be laid upon the Bed by Degrees, covering it at firſt one Inch thick, and a Week or 10 Days after another Inch in Thickneſs may be laid on, but there ſhould be the whole Thickneſs of Earth laid upon the Bed before the Vines begin to run; and if this Thickneſs of Earth is at laſt 5 or 6 Inches, the Vines will grow the ſtronger for being ſo thick; for if the Roots are obſerved, they will be found to ſpread and cover the whole Bed as much as the Vines extend; and when the Earth is very ſhallow, or too light, the Vines will hang their Leaves every

Day, for Want of a ſufficient Depth of Earth to ſupport their Roots; ſo that if they are not conſtantly, and well watered, they will not have Strength to laſt long, nor to produce fair Fruit, and the giving them too much Water is not ſo proper, nor will it anſwer near ſo well, as the giving a Depth of Earth upon the Dung.

In 4 or 5 Days Time your Bed will be in fit Order to receive your Plants, of which you may eaſily judge by pulling out one of the Sticks which was put in the Middle of the Holes, and feeling the lower Part of it, which will ſatisfy you what Condition your Bed is in; then you muſt ſtir up the Earth in the Middle of the Hole with your Hand, breaking all Clods, and removing all large Stones, making the Earth hollow in form of a Baſon; into each of theſe Holes you muſt plant 4 Plants, in doing which, obſerve to make the Holes for the Plants a little ſlanting towards the Middle of the Baſon, eſpecially if your Plants are long ſhanked; this is intended to place the Roots of the Plants as far as poſſible from the Dung, to which if they approach too near, the lower Part of their Roots is ſubject to be burned off; then ſettle the Earth gently to each Plant, and, if the Earth is dry, it will be proper to give them a little Water (which ſhould be warmed to the Temper of the Bed, as before directed); and if the Sun ſhould appear in the Middle of the Day, they ſhould be ſhaded with Mats until the Plants have taken Root, which will be in 2 or 3 Days; after which, you muſt let them enjoy as much of the Sun as poſſible, obſerving to turn the Lights in the Day Time to dry, as alſo to give a little Air whenever the Weather will permit.

You muſt alſo obſerve to keep the Glaſſes covered every Night, and in bad Weather, but be very careful not to keep them covered too cloſe, eſpecially while the Bed has a great Steam in it, which will cauſe a Damp to ſettle upon the Plants, which, for want of Air to keep the Fluid in Motion, will ſtagnate and rot them.

When your Plants are grown 4 or 5 Inches high, you muſt, with ſome ſlender forked Sticks, incline them toward the Earth, each one a ſeparate Way; but this muſt be done gently at firſt, leſt by forcing them too much, you ſhould ſtrain or break the tender Veſſels, which would be very hurtful to them. In this Manner, you ſhould, from Time to Time, obſerve to peg down the Runers as they are produced, laying each in exact Order, ſo as not to interfere or croſs each other; nor ſhould you ever after remove them from their Places, or handle them too roughly, whereby the Leaves may be broken or diſplaced, which is alſo equally injurious to them; but whenever you have Occaſion to weed the Bed between the Plants, do it with great Care, holding the Leaves aſide with one Hand, while with the other you pull out the Weeds.

In about a Month after they are ridged out, you may expect to ſee the Beginnings of Fruit; theſe very often are preceded by male Flowers, which many People are ſo ignorant as to pull off, calling them falſe Bloſſoms, but this I am fully convinced, by the many Experiments, is wrong; for theſe Flowers are of abſolute Service to promote the Welfare of the Fruit, which, when theſe male Flowers are entirely taken off, very often falls away, and comes to nothing; nor ſhould the Vines be pruned, as is too often the Practice of unſkilful People, eſpecially when they are too luxuriant, which often happens when the Seeds were freſh, or of the laſt Year's ſaving, and the Plants in good Heart. If this ſhould happen to be the Caſe, it would be very proper to pull up one or two of the Plants, before they have run ſo far as to entangle with the others; for it often happens, that 2 or 3 Plants are better than 4 or 5, when they are vigorous; for when the Frame is too much crouded with Vines, the Fruit is ſeldom good, nor in ſuch Plenty, as when there is a moderate Quantity of Shoots; for the Air being hereby excluded from the Fruit, they often ſpot and decay, or fall off very young.

You muſt alſo be very careful to cover the Glaſſes every Night when your Fruit begins to appear, alſo to lay a little freſh Litter, or Mowing of Graſs round the Sides of the Bed, to add a freſh Heat thereto; for if the Heat of the Bed be ſpent, and the Nights prove cold, the Fruit will fall away, and come to nothing; and when the Sun is extreme hot, in the Middle of the Day, you muſt cover the Glaſſes with Mats to ſhade the Vines; for although they delight in Heat, yet the direct Rays of the Sun, when it has great Force, are very injurious, by either ſcorching thoſe Leaves which are near the Glaſſes, or by cauſing too great a Perſpiration, whereby the extreme Parts of the Shoots and the large Leaves, are left deſtitute of Nouriſhment, and Fruit will be a at Stand, and often turn yellow before it arrives at half its Growth.

At this Time, when your Vines are ſpread, ſo as to cover the hot Bed, it will be of great Service, when you water them, to ſprinkle them all over gently ſo as not to hurt the Leaves, but obſerve to do this not at a Time when the Sun is very hot, for hereby I have known a whole Bed of Cucumbers ſpoiled; for the Water remaining upon the Surface of the Leaves in Drops, doth collect the Rays of the Sun as it were to a Focus, and ſo ſcorches them, that in one Day's Time they have, from a bright green, become the Colour of brown Paper. The Watering of the Beds all over will be of great Service, by giving Nouriſhment to thoſe Roots, which by this Time will have extended themſelves all over the Bed; and if the Warmth of the Bed ſhould now decline, it will be of great Service to add a Lining of freſh Dung round the Sides of the Beds, to give a new Heat to them; for as the Nights are often cold at this Seaſon, where the Beds have not a kindly Warmth left in them, the Fruit will frequently drop off the Vines, when grown to the Size of a little Finger; and if upon this Lining of Dung there is a Thickneſs of ſtrong Earth laid for the Roots of the Plants to run into, it will greatly ſtrengthen them, and continue the Plants in Vigour a much longer Time than they otherwiſe will do; for the Roots of theſe Plants extend to a great Diſtance when they have Room, which they cannot have in a Bed not more than 5 Feet wide; ſo that when they have no greater Extent for their Roots, the Plants will not continue in Vigour above 5 or 6 Weeks, which, if they have a Depth and Extent of Earth, will continue 3 Months in bearing, ſo where there are ſeveral Beds made near each other, it will be the beſt Way to fill up the Bottom of the Alleys between them with warm Dung, and cover that with a proper Thickneſs of Earth, ſo as to raiſe them to the Level of the Beds.

Theſe Directions, with diligent Obſervation, will be ſufficient for the Management of this Crop of Cucumbers; and Vines thus treated will continue to ſupply you with Fruit till the Beginning of *July*, by which Time the ſecond Crop will come to bear; the ſowing and managing of which is what I ſhall next proceed to.

About the Middle of *March*, or a little later, according to the Earlineſs of the Seaſon, you muſt put in your Seeds, either under a Bell Glaſs, or in the upper Side of your early hot Bed; and when the Plants are come up, they ſhould be pricked upon another moderate hot Bed, which ſhould be covered with Bell or Hand Glaſſes, placed as cloſe as poſſible to each other; the Plants ſhould alſo be pricked at about 2 Inches Diſtance from each other, obſerving to water and ſhade them until they have taken Root, which will be in a very ſhort Time. This is to be underſtood of ſuch Places where a great Quantity of Plants are required, which is conſtantly the Caſe in the Kitchen Gardens near *London*; but where it is only for the Supply of a Family, there may be Plants enough raiſed on the upper Side of the Beds where the firſt Crop is growing; or if the Vines ſhould have extended themſelves ſo far as to cover the whole Bed, whereby there will not be Room to prick the Plants, a ſingle Light will contain a ſufficient Number of Plants, while young, to plant out in Ridges, as will ſupply the largeſt Family with Cucumbers during the latter Seaſon. You muſt alſo cover the Glaſſes with Mats every Night, or in very bad Weather; but in the Day Time, when the Weather is hot, you muſt raiſe the Glaſſes with a Stone on the oppoſite Side from the Wind, to give Air to the Plants, which will greatly ſtrengthen them; you muſt alſo water them as you ſhall find they require it, but this muſt be done ſparingly while the Plants are young.

The Middle of *April* the Plants will be ſtrong enough to ridge out, you muſt therefore be provided with a Heap of new Dung, in Proportion to the Quantity of Holes you intend to plant, allowing one Load to ſix Holes. When your Dung is fit for Uſe, you muſt dig a Trench about 2 Feet 4 Inches wide, and in Length juſt as you pleaſe, or the Place will allow; and if the Soil be dry, it ſhould be 10 Inches deep, but if wet, very little in the Ground, leveling the Earth in the Bottom; then put in your Dung, obſerving to ſtir and mix every Part of it as directed for the firſt hot Beds, laying it cloſe and even.

When this is done, you muſt make Holes about 8 Inches over, and 6 Inches deep, juſt in the Middle of the Ridge, and 3 Feet and a Half Diſtance from each other; and if there be more than one Ridge, the Diſtance of thoſe ought to be 8 Feet and a Half from each other; then fill the Holes with good light Earth, putting a Stick into the Middle of each for a Mark, and afterwards cover the Ridge over with Earth about 4 Inches thick, laying the Earth the ſame Thickneſs round the Sides. When the Earth is leveled ſmooth, you muſt ſet the Glaſſes on the Holes, leaving them cloſe down about 24 Hours, in which Time the Earth in the Holes will be warmed ſufficiently to receive the Plants; then with your Hand ſtir up the Earth in the Holes, making it hollow in form of a Baſon; into each of which you ſhould plant 4 Plants, obſerving to water and ſhade them until they have taken Root, after which Time you muſt be careful to give them a little Air by raiſing the Glaſſes on the oppoſite Side to the Wind, in Proportion to the Heat of the Weather, as alſo to water them as you ſhall ſee they require it; but you muſt only raiſe the Glaſſes in the Middle of the Day, until the Plants fill the Glaſſes, at which Time you ſhould raiſe the Glaſſes with a forked Stick on the South Side in Height proportionable to the Growth of the Plants, that they may not be ſcorched by the Sun; this alſo will harden and prepare the Plants to endure the open Air, but you ſhould not expoſe them too ſoon thereto, for it often happens, that there are Morning Froſts in *May*, which are many Times deſtructive to theſe Plants when expoſed thereto; it is therefore the ſureſt Method to preſerve them under the Glaſſes as long as they can be kept in without Prejudice to the Plants; and if the Glaſſes are raiſed with two Bricks on the Backſide, and the forked Stick on the other Side, they may be kept in a great while without Danger.

Towards the latter End of *May*, when the Weather appears ſettled and warm, you ſhould turn your Plants down gently out of the Glaſs, but do not perform this in a very dry hot ſunny Day, but rather when there is a cloudy Sky, and an Appearance of Rain; you muſt in doing this raiſe the Glaſſes either upon Bricks, or forked Sticks, whereby they may ſtand ſecure at about 4 or 5 Inches high from the Ground, that the Plants may lie under them without bruiſing; nor ſhould you take the Glaſſes quite away till the latter End of *June*, or the Beginning of *July*, for theſe will preſerve the Moiſture much longer to their Roots than if they were quite expoſed to the open Air; about 3 Weeks after you have turned the Plants out of the Glaſſes, they will have made a conſiderable Progreſs eſpecially if the Weather has been favourable, at which Time you ſhould dig up the Spaces of Ground between the Ridges, laying it very even; then lay out the Runners of the Vines in exact Order, and be careful in this Work not to diſturb the Vines too much, nor to bruiſe or break the Leaves; this Digging of the Ground will looſen it, and thereby render it eaſy for the Roots of the Plants to ſtrike into it, as alſo render the Surface of the Earth more agreeable to the Vines that run upon it. After this there will be no farther Care needful, but only to keep them clear from Weeds, and to water them as often as they require, which they will ſoon ſhew, by the hanging of their greater Leaves. The Ridges, thus managed, will continue to produce large Quantities of Fruit from *June* until the latter End of *Auguſt*, after which Time the Coldneſs of the Seaſon renders them unwholeſome, eſpecially if the Autumn proves wet.

From theſe Ridges People commonly preſerve their Cucumbers for Seed, by making Choice of 2 or 3 of the faireſt Fruit upon each Hole, never leaving above one upon a Plant, and that ſituated near the Root of it; for if you leave more, they will weaken the Plant ſo much, that your other Fruit will be ſmall, and fewer in Number: But thoſe Perſons who value themſelves upon producing Cucumbers very early, commonly leave 3 or 4 Cucumbers of the firſt Produce of their earlieſt Crop, when the Fruit is fair; and the Seeds of theſe early Fruit are generally prefered to any other for the firſt

Crop. Theſe ſhould remain upon the Vines until the End of *Auguſt*, that the Seeds may be perfectly ripe; and when you gather them from the Vines, it will be proper to ſet the Fruit in a Row upright againſt a Hedge or Wall, where they may remain until the outer Cover begins to decay; at which Time you ſhould cut them open, and ſcrape out the Seeds, together with the Pulp, into a Tub, which ſhould be afterwards covered with a Board, to prevent Filth from getting amongſt the Pulp. In this Tub it ſhould be ſuffered to remain 8 or 10 Days, obſerving to ſtir it well with a long Stick to the Bottom every Day, in order to rot the Pulp, that it may be eaſily ſeparated from the Seeds; then pour ſome Water into the Tub, ſtirring it well about, which will raiſe the Scum to the Top, but the Seeds will ſettle to the Bottom; ſo that by 2 or 3 Times pouring in Water, and afterwards ſtraining it off from the Seeds, they will be perfectly cleared from the Pulp; then you ſhould ſpread the Seeds upon a Mat, which ſhould be expoſed to the open Air 3 or 4 Days, until they are perfectly dry, when they may be put in Bags, and hung up in a dry Place, where Vermin cannot come to them, where they will keep good for ſeveral Years, but are generally preferred when 3 or 4 Years old, being apt to produce leſs vigorous, but more fruitful Plants.

I ſhall, in the next Place, proceed to give Directions for managing Cucumbers for the laſt Crop, or what are generally called Picklers.

The Seaſon for ſowing theſe is towards the latter End of *May*, when the Weather is ſettled. The Ground where theſe are commonly ſown, is between Cauliflowers, in wide Rows, between which are allowed 4 Feet and a Half Space when the Cauliflowers were planted. In theſe Rows you ſhould dig up ſquare Holes at about 3 Feet and a Half Diſtance from each other, breaking the Earth well with a Spade, and afterwards ſmoothing and hollowing it in the Form of a Baſon with your Hand; then put 8 or 9 Seeds in the Middle of each Hole, covering them over with Earth about half an Inch thick; and if it ſhould be very dry Weather, it will be proper to water the Holes gently in a Day or two after the Seeds are ſown, to facilitate their Germination.

In five or ſix Days, if the Weather be good, your Plants will begin to thruſt their Heads above Ground; at which Time you ſhould be very careful to keep off the Sparrows, which are very fond of the young tender Heads; and, if not prevented, will deſtroy your whole Crop: But as it is not above a Week that the Plants are in Danger, it will be no great Trouble to look after them during that Time; for when the Plants are come up, and have expanded their Seed Leaves, the Sparrows will not meddle with them.

You muſt alſo be careful to water them gently, as you find the Drought of the Seaſon may require; and when you perceive the third or rough Leaf of the Plants begin to appear, you muſt pull out all the weakeſt Plants, leaving only four of the moſt promiſing and beſt ſituated in each Hole, ſtirring the Earth round about them with a ſmall Hoe to deſtroy the Weeds, and raiſe the Earth about the Shanks of the Plants, putting a little Earth between them, preſſing it gently down with your Hand, that the Plants may be thereby ſeparated from each other to a greater Diſtance; then give them a little Water (if the Weather be dry) to ſettle the Earth about them, which you muſt afterwards repeat as often as you ſhall find it neceſſary, ſtill being careful to keep the Ground clear from Weeds.

When your Cauliflowers are quite drawn off the Ground from between the Cucumbers, you muſt hoe and clean the Ground, drawing the Earth up round each Hole in Form of a Baſon, the better to contain the Water when it is given them; you muſt alſo lay out the Plants in exact Order as they are to run and extend, ſo that they may not interfere with each other; then lay a little Earth between the Plants left, preſſing it down gently with your Hand, the better to ſpread them each Way, giving them a little Water to ſettle the Earth about them, repeating it as often as the Seaſon ſhall require, and obſerving to keep the Ground clean from Weeds. The Plants, thus managed, will begin to produce Fruit toward the latter End of *July*, when you may either gather them young for pickling, or ſuffer them to grow for large Fruit.

The Quantity of Holes neceſſary for a Family, is about 50 or 60; for if you have fewer, they will not produce enough at one gathering to make it worth the Trouble and Expence of Pickling, without keeping them too long in the Houſe; for you cannot expect to gether more than 200 at each Time from fifty Holes; but this may be done twice a Week during the whole Seaſon, which commonly laſts five Weeks; ſo that from fifty Holes you may reaſonably expect to gather about 2000 in the Seaſon, which, if they are taken ſmall, will not be too many for a private Family. And if ſo many are not wanted, they may be left to grow to a proper Size for eating.

CUCUMIS AGRESTIS. *See* Momordica.

CUCURBITA. *Lin. Gen. Plant.* 968. *Tourn. Inſt. R. H.* 107. the Gourd, in *French Calibaſſe*.

The *Characters* are,

It hath male and female Flowers in the ſame Plant. The Flowers have a Bell-ſhaped Empalement of one Leaf, whoſe Borders are terminated by 5 *Briſtles; the Flowers are Bell-ſhaped, adhering to the Empalement, and are of one Petal, which is veined and rough, divided at the Top into* 5 *Parts. The male Flowers have* 3 *Stamina, connected at their Extremity, but are diſtinct at their Baſe, where they adhere to the Empalement; theſe are terminated by linear Summits running up and down. The female Flowers have a large Germen, ſituated under the Flower, ſupporting a conical trifid Style, crowned by a large trifid Stigma. The Germen becomes a large fleſhy Fruit, having* 3 *ſoft membranaceous Cells which are diſtinct, incloſing* 2 *Rows of Seeds which are bordered.*

1. CUCURBITA *foliis ſubangulatis tomentoſis, baſi ſubtus biglanduloſis, pomis lignoſis. Lin. Sp. Plant.* 1010. Gourd with angular woolly Leaves, having a glandulous Baſe, and a hard Shell to the Fruit. This is the *Cucurbita longa folio molli, flore albo. J. B.* 2. 221. Long Gourd with a ſoft Leaf and white Flower, commonly called the Long Gourd.

2. CUCURBITA *foliis lobatis, pomis lævibus. Lin. Sp. Plant*, 1010. Gourd with lobed Leaves and a ſmooth Fruit. This is the *Cucurbita major rotunda, flore luteo, folio aſpero. C. B. P.* 213. Greater round Gourd, with a yellow

a yellow Flower and rough Leaf commonly called Pompion or Pumkin.

3. CUCURBITA *foliis lobatis, pomis nodoſo-verrucoſis. Lin. Sp. Plant.* 1010. Gourd with lobed Leaves, and a warted knobby Fruit. This is the *Cucurbita verrucoſa. J. B.* 2. 222. Warted Gourd.

4. CUCURBITA *foliis lobatis, caule erecto, pomis depreſſo-nodoſis. Lin. Sp. Plant.* 1010. Gourd with lobed Leaves, an erect Stalk, and a depreſſed knotty Fruit. This is the *Melopepo clypeiformis. C. B. P.* 312. *Melopepo* having a Shield-ſhaped Fruit, commonly called Squaſh.

5. CUCURBITA *foliis lobatis aſperis, flore luteo, pomis lignoſis.* Gourd with rough lobed Leaves, a yellow Flower, and Fruit having a hard Shell, commonly called Calabaſh.

The 1ſt Sort is propagated in the *Engliſh* Gardens by Way of Curioſity, but the Fruit is very rarely eaten here; though, if they are gathered when young, while their Skins are tender, and boiled, they have an agreeable Flavour. In the Eaſtern Countries they are very commonly cultivated and ſold in the Markets for the Table, and are a great Part of the Food of the common People, from *June* to *October*. They are alſo eaten in both the *Indies*, where the Plants are cultivated, as culinary; and in thoſe Countries, where the Heat of their Summers is too great for many of our common Vegetables, theſe may be a very good Subſtitute.

This Sort doth not vary like moſt of the others, but always produces the ſame ſhaped Fruit; the Plants extend to a great Length, if the Seaſon proves warm and favourable, and will then produce ripe Fruit; but in cold Summers, the Fruit ſeldom grows to half its uſual Size; I have meaſured ſome of them when growing, which were 6 Feet long, and a Foot and Half round; the Plants were near 20 Feet in Length: The Stalks and Leaves are covered with fine ſoft hairy Down; the Flowers are large, white, and ſtand on long Foot Stalks, being reflexed at their Brim; the Fruit is generally incurved and crooked, and when ripe, is of a pale yellow Colour. The Rind becomes hard, ſo that if the Seeds and Pulp are taken out, and the Shell dried, it will contain Water; and in thoſe Countries where they are much cultivated, are uſed for many Purpoſes.

The 2d Sort, which is commonly known by the Title of Pumpkin, is frequently cultivated by the Country People in *England*, who plant them on their Dunghills, where the Plants run over them, and ſpread to a great Diſtance; when the Seaſons are favourable, they will produce plenty of large Fruit; theſe they uſually ſuffer to grow to Maturity, then they cut open a Hole on one Side, and take the Seeds out of the Pulp as clean as poſſible, after which they fill the Shell with Apples ſliced, which they mix with the Pulp of the Fruit, and ſome add a little Sugar and Spice to it; then bake it in an Oven, and eat it as baked Apples; but this is a ſtrong Food, and only fit for thoſe who labour hard, and can eaſily digeſt it.

Theſe may be propagated by ſowing their Seeds in *April*, on a hot Bed; and when the Plants come up, they ſhould be tranſplanted on another moderate Bed, where they ſhould be brought up hardily, and have a great deal of Air to ſtrengthen them; and when they have got 4 or 5 Leaves, ſhould be tranſplanted into Holes made on an old Dunghill, or ſome ſuch Place, allowing them a great deal of Room to run, for ſome of the Sorts will ſpread to a great Diſtance. I have meaſured a ſingle Plant, which had run upwards of 40 Feet from the Hole, and produced a great Number of Side Branches; ſo that if the Plant had been encouraged, and all the Side Branches permitted to remain, I dare ſay it would have fairly overſpread 20 Rods of Ground; which, to ſome People, may ſeem like a Romance, yet I can affirm it to be Fact. But what is this to the Account printed in the *Tranſactions of the Royal Society*, communicated to them by *Paul Dudley*, Eſq; from *New-England*, wherein Mention is made of a ſingle Plant of this Kind, which, without any Culture, ſpread over a large Spot of Ground, and from which Plant were gathered 260 Fruits each, one with another, as big as a half Peck.

There are ſeveral Varieties of this Fruit, which differ in Form and Size; but as theſe annually vary from Seeds, I have omitted mentioning them, for they ſeldom continue to produce the ſame Kinds of Fruit three Years together.

The 3d Sort is very common in moſt Parts of *America*, where it is cultivated as a culinary Fruit; of this Sort there are alſo ſeveral Varieties, which differ in Form and Size; ſome of theſe are flat, others round; ſome are ſhaped like a Bottle, and others are oblong, their outer Cover or Rind being white when ripe, and covered with large Protuberances or Warts. The Fruit are commonly gathered when they are half grown, and boiled by the Inhabitants of *America* to eat as a Sauce with their Meat; but in *England* they are only cultivated for Curioſity, few Perſons having a Reliſh for them here, where they have a great Variety of better eſculent Plants at the Seaſon, when theſe are fit for Uſe. Theſe may be propagated as the 2d Sort.

The 4th Sort is alſo very common in *North America*, where it is cultivated for the ſame Purpoſes as the third. This very often grows with a ſtrong buſhy erect Stalk, without putting out Runners from the Side, as the other Sorts, but frequently varies; for after it has been cultivated a few Years in the ſame Garden, the Plants will become trailing like the others, and extend their Branches to as great Diſtance; and yet I have known when Part of the Seeds, taken out from the ſame Fruit has been ſown in another Garden, at a conſiderable Diſtance, the Fruit have been the ſame, and the Plants have grown erect, when thoſe which were ſown in the ſame Garden, have produced trailing Plants with larger Fruit of a different Shape.

The Fruit of the 5th Sort, hath a hard Shell when ripe like the 1ſt, which may be dried and preſerved many Years: Theſe are of very different Forms and Size; ſome are ſhaped like a Pear, and are no bigger than a large *Catherine* Pear; ſome are as large as Quart Bottles, and almoſt of the ſame Form; others are round, ſhaped like an Orange, and of the ſame Size and Colour, but theſe are very variable; for I have cultivated moſt of the Sorts near 40 Years, and have not been able with all poſſible Care to preſerve the Varieties longer than 2 or 3 Years in the ſame Garden, without procuring freſh Seeds from ſome diſtant Place. Whether theſe Changes are brought about by the Admixture of the Farina with each other, or from what Cauſe I cannot ſay, becauſe I have frequently planted them at as great Diſtance from each other as I poſſibly could in the ſame Garden, and yet the Effect has been the ſame as when near.

The 1ſt Sort requires to be treated more tenderly than the others, in order to procure ripe Fruit, ſo the Seeds ſhould be ſown upon a moderate hot Bed in *April*, and the Plants afterward planted each into a Penny Pot, and plunged into a very moderate hot Bed to bring them forward; but they muſt not be tenderly treated, for if they have not a large Share of free Air admitted every Day, they will draw up weak. When the Plants are grown too large to be continued in the Pots, there ſhould be Holes dug where they are deſigned to grow, and 3 or 4 Barrows of hot Dung put into each; theſe ſhould be covered with Earth, into which they muſt be planted, and covered with Hand Glaſſes till they run out.

There are ſome who plant them by the Sides of Arbours, over which they train the Vines; ſo that in a ſhort Time they will cover the whole Arbour, and afford a ſtrong Shade, and upon ſome of theſe Arbours I have ſeen the longeſt Fruit. There are others, who plant them near Walls, Pales, or Hedges, to which they faſten the Vines, and train them to a great Height: The Orange-ſhaped Gourd is the Sort which is moſt commonly ſo planted for the Ornament of its Fruit, this has a pretty Effect, when ſeen at ſome Diſtance. Theſe Plants all require a large Supply of Water in dry Weather.

Theſe Plants requiring ſo much Room to ſpread, and their Fruit being little valued in *England*, hath occaſioned their not being cultivated amongſt us; we having ſo many Plants, Roots, or Fruits, greatly preferable to thoſe for Kitchen Uſes: But in ſome Parts of *America*, where Proviſions are not in ſo great Plenty, or ſo great Variety, theſe may be very acceptable.

CUIETE. *See* Creſcentia.

CULMIFEROUS PLANTS are ſuch as have a ſmooth jointed Stalk, and uſually hollow, and at each Joint wrapped about with ſingle, narrow, ſharp pointed Leaves; and their Seeds are contained in chaffy Huſks, as Wheat, Barley, *&c.*

CUMINOIDES. *See* Lagoecia.

CUMINUM. *Lin. Gen. Pl.* 313. Cumin.

The *Characters* are,

It hath an umbelliferous Flower; the general Umbel is compoſed of ſmaller, divided into 4 Parts, their Involucrum is longer than the Umbel. The great Umbel is uniform, the Flowers have 5 unequal Petals, whoſe Borders are inflexed, and 5 ſingle Stamina, terminated by ſlender Summits. It hath a large Germen ſituated under the Flower, ſupporting 2 ſmall Styles, crowned by ſingle Stigmas. The Germen becomes an oval ſtriated Fruit, compoſed of 2 oval Seeds, convex and furrowed on one Side, and plain on the other.

We have but one *Species* of this Genus,

Cuminum. *Lin. Mat. Med.* Cumin. *Cuminum ſemine longiore. C. B. P.* Cumin with a longer Seed.

This Plant is annual, periſhing ſoon after the Seeds are ripe; it ſeldom riſes more than 9 or 10 Inches, in the warm Countries where it is cultivated; but I have never ſeen it grow more than 3 or 4 Inches high in *England*, where I have had the Plants come ſo far as to flower very well, but never to produce Seeds. The Leaves are divided into long narrow Parts, like thoſe of Fennel, but much ſmaller; they are of a deep green, and generally turn backward at their Extremity; the Flowers grow in ſmall Umbels at the Top of the Stalks; theſe are compoſed of 5 unequal Petals, of a pale bluſh Colour, and are ſucceeded by long channeled aromatick Seeds.

The Seeds of this Plant is the only Part uſed in Medicine; theſe are ranged among the greater hot Seeds; they conſiſt of very warm diſſolving Parts, and are eſteemed good to expel Wind from the Stomach and Bowels, ſo are frequently put into Clyſters, and ſometimes given in Powder; outwardly applied, they are of great Service to eaſe Pains of the Breaſt or Side.

This Plant is propagated for Sale in the Iſland of *Malta*, where it is called *Cumino aigro, i. e.* hot Cumin. But Aniſe, which they alſo propagate in no leſs Quantity, they call *Cumino dulce, i. e.* ſweet Cumin. So that many of the old Botaniſts were miſtaken, when they made two Species of Cumin, *viz. acre* and *dulce*.

If the Seeds are ſown in ſmall Pots filled with light Kitchen Garden Earth, and plunged into a very moderate hot Bed to bring up the Plants, and theſe after having been gradually inured to the open Air, turned out of the Pots, and planted in a warm Border of good Earth, preſerving the Balls of Earth to their Roots, and afterward kept clean from Weeds; the Plants will flower pretty well, and by thus bringing them forward in Spring, they may perfect their Seeds in warm Seaſons.

CUNILA. *See* Sideritis.

CUNONIA. *Buttn. Cun. Antholyza. Lin. Gen. Pl.*

The *Characters* are,

The Flowers grow alternate in an imbricated Spike, each having a Spatha or Sheath, compoſed of two Spear-ſhaped concave Leaves; the Flower hath one ringent Petal, having a ſhort ſlender Tube, which is dilated at the Chaps and compreſſed on the Sides; the upper Lip is arched, and ſtretched out a conſiderable Length beyond the Alæ or Wings, and is rounded at the Top: It hath 3 long ſlender Stamina, ſituated in the upper Lip, terminated by oblong flat Summits, which are faſtened in their Middle and lie proſtrate. It hath a ſlender Style, which is ſhorter than the Stamina, crowned by 3 cylindrical Stigmas, which join the Summits, and are included in the upper Lip. The Germen, which is ſituated below the Flower, becomes an oblong Capſule with 3 Cells, filled with compreſſed Seeds.

We have but one *Species* of this Genus at preſent in the *Engliſh* Gardens, which is

Cunonia *floribus ſeſſilibus, ſpathis maximis. Buttn. Cun.* 211. *Tab.* 1. *Cunonia* with Flowers ſitting cloſe to the Stalk, and very large Spathæ or Sheaths. Dr. *Linnæus* ſtiles it *Antholyza ſtaminibus omnibus adſcendentibus. Sp. Plant.* 37. *Antholyza* with all the Stamina aſcending.

The Seeds of this Plant I received from the *Cape of Good Hope*, where it grows naturally, which ſucceeded ſo well in the *Chelſea* Garden, as to produce a great Number of Plants, which flowered well the third Seaſon after they appeared, and have continued to produce Flowers, and perfect their Seeds every Year ſince.

This hath a compreſſed bulbous Root, ſomewhat like that of Corn Flag, covered with a brown Skin; from this ariſe ſeveral narrow Sword-ſhaped Leaves, about nine Inches long, and a Quarter of an Inch broad in the Middle, terminating in acute Points; theſe have one longitudinal Midrib which is prominent, and two longitudinal

tudinal Veins running parallel on each Side; they are of a Sea-green Colour, and appear in Autumn, growing in Length all the Winter; in Spring the Stalk ariſes from between the Leaves, which is round, ſtrong, and jointed; at each Joint is ſituated a ſingle Leaf, which almoſt embraces the Stalk for near three Inches from the Baſe, then by the Curvature of the Stalk it is ſeparated, ſtanding erect: The Stalks riſe near a Foot and a Half high, which is generally curved two oppoſite Ways; the upper Part of the Stalk is terminated by a looſe Spike of Flowers, coming out of large Spathæ or Sheaths compoſed of two oblong concave Leaves, terminating in acute Points: Theſe are at their firſt Appearance placed *imbricatim* over each other, but as the Stalk increaſes in Length, ſo theſe are ſeparated; from between theſe two Leaves come out the Flower, each having a ſlender Saffron coloured Tube near half an Inch long, which is then enlarged where the Petal is divided, and the upper Segment is extended two Inches in Length, being arched over the Stamina and Style. This is narrow as far as to the Extent of the Wings, but above them is enlarged and ſpread open, half an Inch in Length, and is concave, covering the Summits and Stigmas which are extended to that Length; the two Wings are alſo narrow at their Baſe, but are enlarged upward in the ſame Manner, ending in concave obtuſe Points, which are compreſſed together, and cover the Stamina and Style. This Flower is of a beautiful ſoft ſcarlet Colour, ſo makes a fine Appearance, about the End of *April* or Beginning of *May*, which is the Seaſon of its flowering. After the Flowers decay, the Germen becomes an oval ſmooth Capſule opening in 3 Cells, filled with flat bordered Seeds.

This Plant is too tender to thrive in the open Air in *England*, ſo the Roots muſt be planted in Pots filled with light Earth, and may remain in the open Air till *October*, when they muſt be removed into Shelter, either into a Green-houſe, or an airy Glaſs Caſe, where the Leaves will keep growing all Winter, and in Spring the Stalks ariſe and flower. During the Winter Seaſon, the Plants will require a little Water once a Week, but not in great Quantities, eſpecially in cold Weather; in Spring they ſhould be watered oftener; and when the Flowers are paſt, the Pots ſhould be removed into the open Air to perfect Seeds, which will ripen the latter End of *June*, ſoon after which the Stalks decay to the Root, and remain inactive till *September*. When the Stalks are decayed, the Roots may be taken out of the Ground, and kept in a dry Room till the End of *Auguſt*, when they ſhould be planted again.

This Plant is eaſily propagated by Offsets, which it ſends out in great Plenty, or by ſowing the Seeds, which ſhould be ſown in Pots about the Middle of *Auguſt*, and placed in a Situation where they may enjoy the Morning Sun, and in dry Weather ſhould be gently watered; in *September* the Pots may be removed to a warmer Situation, and in *October* they muſt be placed under a Frame, to protect them from Froſt and hard Rains, but in mild Weather they muſt enjoy the free Air. Theſe Plants will appear in *October*, and continue growing all the Winter, and in *June* their Leaves will decay; then they may be taken up, and 4 or 5 Roots may be planted in a ſmall Pot, till they have grown another Year, when they may be each put into a ſeparate Pot. Theſe Seedling Plants muſt be ſheltered as the old Roots in Winter, and the third Year they will flower.

CUPRESSUS. *Lin. Gen. Plant.* 958. *Tourn. Inſt.* The Cypreſs Tree; in French, *Cypres.*

The *Characters* are,

It hath male and female Flowers growing at Diſtances on the ſame Plant; the male Flowers are formed into oval Katkins, in which the Flowers are placed thinly, there being ſeveral roundiſh Scales, each having a ſingle Flower. Theſe have no Petals nor Stamina, but have 4 *Summits adhering to the Bottom of the Scales. The female Flowers are formed in a roundiſh Cone, each containing* 8 *or* 10 *Flowers; the Scales of the Cones are oppoſite, each having a ſingle Flower, theſe have no Petals; the Germen is ſcarce viſible, but under each Scale there are many Punctures or Spots, and a concave truncated Apex inſtead of a Style; this becomes a globular Cone, opening in angular Target-ſhaped Scales, under which are ſituated angular Seeds.*

The *Species* are,

1. Cupressus *foliis imbricatis, ramis erectioribus.* Cypreſs with imbricated Leaves, and upright Branches. This is the *Cupreſſus metâ in faſtigium convolutâ quæ fæmina. Plinii. Dod.* Female or common upright Cypreſs.

2. Cupressus *foliis imbricatis acutis, ramis horizontalibus.* Cypreſs with imbricated, acute Leaves, and Branches growing horizontally. This is the *Cupreſſus ramos extra ſe ſpargens quæ Mas.* Male ſpreading Cypreſs.

3. Cupressus *foliis imbricatis, apicibus aculeatis, ramis dependentibus.* Cypreſs with imbricated Leaves, terminating in Spines, and Branches hanging downward. This is the *Cupreſſus Luſitanica, patula, fructu minore. Tourn. Portugal* ſpreading Cypreſs with a ſmaller Fruit.

4. Cupressus *foliis diſtichis patentibus. Hort. Cliff.* 409. Cypreſs with Leaves on two Sides the Branches. This is the *Cupreſſus Virginiana foliis Acaciæ deciduis. Hort. Amſt.* 1. p. 113. *Virginia* Cypreſs which ſheds its Leaves, commonly called Deciduous Cypreſs.

5. Cupressus *foliis imbricatis, frondibus ancipitibus. Lin. Sp. Plant.* 1003. Cypreſs with imbricated Leaves, and Branches ſtanding two Ways. This is the *Cupreſſus nana Mariana, fructu cæruleo parvo. Pluk. Mant.* 61. Dwarf *Maryland* Cypreſs with a ſmall blue Fruit.

6. Cupressus *foliis linearibus ſimplicibus cruciatim poſitis.* Cypreſs with narrow, ſingle Leaves, placed croſſways. This is the *Cupreſſus Africana* of *Herman. African* Cypreſs Tree, called by the *Dutch* Cypreſs Boom.

The firſt of theſe Trees is very common in old Gardens in *England*; but at preſent is not ſo much in Requeſt as formerly, though it is not without its Advantages; for it ſerves to add to the Beauty of Wilderneſſes, or Clumps of Ever-greens, and where properly diſpoſed they have their Beauties. It was formerly planted in Borders of Pleaſure Gardens, and kept ſhorn into a pyramidal or conick Form; and ſome People, believing them ſubject to be killed if they cut them, tied them up with Cords into a pyramidal Figure; which Form they are naturally diſpoſed to grow in; but this, prevented the Air from entering the inward Parts of the Branches; ſo that the Leaves decayed, and became unſightly, and it greatly retarded their Growth. Thoſe which are ſheared, if the Operation is not performed in Spring, or early in Summer, are very ſubject to be injured by ſharp

Winds, and cutting Froſts, in Winter. Wherefore, upon the whole, I think it much better to ſuffer them to grow wild as they are naturally diſpoſed, planting them only among other ever-green Trees, where, by the Darkneſs of their green Leaves, together with their waving Heads, they will greatly add to the Variety.

The 2d Sort is by far the largeſt growing Tree, and the moſt common Timber in the *Levant:* This, if planted on a warm ſandy gravelly Soil, will proſper wonderfully; and though the Plants are not ſo finely ſhaped as the 1ſt Sort, yet they make amends for that Defect, by their vigorous Growth, and Strength in reſiſting all Weathers. This Tree is very proper to intermix with Ever-greens of a ſecond Size next to Pines and Firrs, to form Clumps; in which Claſs it will keep Pace with the Trees of the ſame Line, and be very handſome. Beſides, the Wood is very valuable, when grown to a Size fit for Planks; which I am convinced it will do, in as ſhort a Space as Oaks; therefore, why ſhould not this be cultivated for that Purpoſe, ſince there are many Places in *England* where the Soil is of a ſandy or gravelly Nature, and ſeldom produces any Thing worth Cultivating? In ſuch Places theſe Trees would thrive wonderfully, and greatly add to the Pleaſure of the Owner, while growing, and afterwards render as much Profit to his Succeſſors, as perhaps the beſt Plantation of Oaks; eſpecially ſhould the Timber prove as good here, as in the Iſlands of the *Archipelago*, which I ſee no Reaſon to doubt; for we find it was ſo gainful a Commodity to the Iſland of *Candia*, that the Plantations were called *Dos Filiæ*; the Felling of one of them being reckoned a Daughter's Portion.

The Timber of this Tree is ſaid to reſiſt the Worm, Moth, and all Putrefaction, and to laſt many hundred Years. The Doors of St. *Peter*'s Church at *Rome* were framed of this Material, which laſted from the great *Conſtantine* to Pope *Eugenius* IVth's Time, which was 1100 Years, and were then ſound and entire, when the Pope changed them for Gates of Braſs. The Coffins were made of this Wood, in which *Thucydides* tells us the *Athenians* uſed to bury their Heroes; and the Mummy Cheſts, brought with thoſe condited Bodies out of *Egypt*, are many of them of this Material.

This Tree is by many learned Authors recommended for the Improvement of the Air, and a Specific for the Lungs, as ſending forth great Quantities of aromatic and balſamic Scents; wherefore the antient Phyſicians of the Eaſt uſed to ſend their Patients, who were troubled with weak Lungs, to the Iſland of *Candia*, which abounded with theſe Trees, where, from the Effects of the Air alone, very few failed of a perfect Cure.

The 4th Sort is a Native of *America*, where it grows in watery Places, and riſes to a prodigious Height, and wonderful Bulk: I have been informed, that there are Trees of this Kind in *America* upwards of 70 Feet high, and ſeveral Fathoms in Circumference; which Trees grow conſtantly in the Water; therefore they may probably be of ſingular Advantage to plant in ſuch ſwampy or wet Soils, where few other Trees will grow, eſpecially of the reſinous Kind. That they are very hardy, in reſpect to Cold, is evident, from ſome few Trees of this Kind which were formerly planted in *England*; particularly one in the Gardens of *John Tradeſcant* at *South Lambeth* near *Vaux-Hall*, which is upwards of 30 Feet high, and of a conſiderable Bulk; which, though in a common Yard at preſent, where no Care is taken of it, but, on the contrary, many Hooks are driven into the Trunk, to faſten Cords thereto for drying of Clothes, yet the Tree is in great Health and Vigour; but hath not produced any Fruit; which may be occaſioned for Want of Moiſture: For we often ſee many aquatick Plants will grow upon a drier Soil; but yet are ſeldom ſo productive of either Flowers or Fruit, as thoſe which remain growing in the Water.

There is alſo a pretty large Tree of this Kind, now growing in the Gardens of Sir *Abraham Janſſen*, Bart. at *Wimbleton* in *Surry*, which has produced great Quantities of Cones for ſome Years paſt, which, in favourable Seaſons, come to Maturity; and the Seeds have been as good as thoſe which have been brought from *America*. This Tree was tranſplanted when it was very large, which has ſtinted its Growth; this may have occaſioned its Fruitfulneſs; for it has made very little Progreſs in its Growth ſince it was removed.

Theſe Trees are all propagated from Seeds, which ſhould be ſown early in Spring on a Bed of warm dry ſandy Earth, which muſt be levelled very ſmooth; then ſow the Seeds thereon pretty thick, ſifting the ſame light Earth over them half an Inch thick. If the Weather ſhould prove very warm and dry, it will be proper to water the Bed, which muſt be done very carefully, obſerving not to waſh the Seeds out of the Ground. In about two Months Time (if your Seeds are good) the young Plants will appear above Ground, which muſt be conſtantly kept clean from Weeds, and in very dry Weather ſhould be often refreſhed with Water; but this ſhould be done with great Caution, leſt you beat theſe tender rooted Plants out of the Ground.

If the Seeds are ſown on a moderate hot Bed, and the Bed covered with Mats, they will come up much ſooner, and with greater Certainty, than when they are ſown in the cold Ground.

In this Bed the young Plants may remain two Years, by which Time they will have Strength enough to be tranſplanted into a Nurſery, but while the Plants are young, they are tender; ſo ſhould be covered in ſevere Froſt with Mats to prevent their being injured thereby. The beſt Seaſon for removing them is in the Beginning of *April*, when the drying Eaſterly Winds of *March* are over; and, if poſſible, chooſe a cloudy Day, when it is inclinable to Rain; and in taking them out of the Seed Bed, preſerve the Roots as entire as poſſible, and, if you can, a Ball of Earth to each Plant. The Soil in which theſe Trees ſhould be planted (as I before ſaid), ſhould be, for the two firſt Sorts, a warm Sand or Gravel; which, when you have prepared, by carefully digging and cleanſing from all noxious Weeds, you muſt lay level. Then draw the Lines where the Trees are to be planted at 3 Feet aſunder, and plant the Trees at 18 Inches Diſtance in the Rows, obſerving to cloſe the Earth well to their Roots, and lay a little Mulch upon the Surface of the Ground about their Stems; water them well to ſettle the Earth to their Roots, which ſhould be repeated twice a Week, until they have taken freſh Root.

Theſe Plants may remain in the Nurſery 3 or 4 Years, according to the Progreſs they make, or till your Ground is ready where they are to be planted: But if you intend to let them remain longer, you ſhould take up every other Tree in the Rows, and tranſplant them; otherwiſe their Roots will be intermixed, ſo as to render it difficult to tranſplant them, and alſo endanger the future Growth of the Trees. Theſe Plants ſhould by no Means be let ſtand too long in the Nurſery, before before they are tranſplanted out for good; becauſe the Roots do not mat together ſo cloſely as thoſe of many other Sorts of ever-green Trees, whereby they may be taken up with good Balls of Earth to their Roots; but the Roots of the Cypreſs are apt to extend out in Length; ſo it is one of the moſt difficult Trees to remove when grown large; therefore moſt curious Perſons chooſe to plant the young Plants into ſmall Pots, when they firſt take them out of the Seed Bed; and ſo train them up in Pots two or three Years, until they are fit to plant out, where they are to ſtand for good; and, by this Management, they are ſecure of all the Plants; theſe may be ſhaken out of the Pots at any Time of the Year without Danger, and planted with their whole Ball of Earth, which is likewiſe a great Advantage. When they are planted out for good (if they are deſigned for Timber,) the Diſtance ſhould be about 18 or 20 Feet every Way; and be very careful in removing them, not to ſhake the Earth from their Roots; to prevent which, you ſhould open the Ground about each Tree, cutting off all long Roots; then working under the Ball of Earth, cut the downright Roots off; and after having pared off all the Earth from the upper Part of the Ball, as alſo reduced the Bulk of it, ſo that its Weight may not be too great for the Fibres to ſupport, they may be carried upon a Hand Barrow by two Perſons to the Place where they are to be planted; but if they are to be carried to a very diſtant Place, they ſhould either be put into Baſkets, or their Roots cloſely matted up. When they are planted, you muſt ſettle the Earth cloſe to their Roots, as before, laying a little Mulch on the Surface of the Ground about their Stems, to prevent the Sun and Wind from entering the Earth to dry their Fibres; and Water them well, to ſettle the Ground to their Roots; which muſt alſo be repeated (if the Weather be dry) until they have taken Root; after which Time they will require little more Care than to keep them clear from Weeds.

The 1ſt, which is the moſt common Sort in *England*, ſeldom produces good Seeds in this Country; it is therefore the beſt Way to have the Cones brought over entire from the South of *France* or *Italy*, where they ripen perfectly well, and take the Seeds out juſt before you ſow them; for they will keep much better in the Cones than if they are taken out. The Method to get the Seeds out is to expoſe the Cones to a gentle Heat, which will cauſe them to open, and eaſily emit their Seeds.

The 2d Sort grows naturally in the *Levant*, and from thence it has been formerly brought to *Italy*, but at preſent is rare in *England*; for what has paſſed under this Title here, is only a Variety of the common Sort, whoſe Branches grow much looſer, and not ſo upright as the firſt; but the Cones taken from theſe Trees, and the Seeds ſown, have frequently produced Plants of both Varieties; the true ſpreading Cypreſs extends its Branches horizontally from the firſt Year, and continues to extend them to a great Length as the Plants advance, and the Plants raiſed from the Seeds do not vary; ſo that it is certainly a diſtinct Species. This grows to be a large Timber Tree in the *Levant*, and in *Italy* there are ſome of a conſiderable Size.

The *Virginian* Kind may alſo be propagated in great Plenty; for the Cones may be eaſily procured from *Carolina* or *Virginia*, in both which Places they grow in great Abundance; the Seeds will riſe as eaſily as any of the other Sorts, and the Plants are equally as hardy: theſe have been formerly kept in Pots, and houſed in Winter; with which Management they have not ſucceeded ſo well in *England*, as ſince they have been planted in the full Ground; and where they have had a moiſt Soil, I have obſerved them to thrive beſt; this is ſince confirmed by Mr. *Cateſby*, in his Natural Hiſtory of *Carolina*; where he ſays, this Tree grows in Places where the Water commonly covers the Surface of the Ground 3 or 4 Feet; ſo that it may be a very great Improvement to our boggy Soils. This Tree, caſting its Leaves in Winter, does not ſo well ſuit with Plantations of Ever-greens at that Seaſon; though, in Summer, when there is the greateſt Pleaſure in walking among Plantations of Trees, it hath ſo much the Appearance of an Ever-green, as to paſs for ſuch. It may alſo be propagated by Cuttings, which ſhould be planted in a Bed of moiſt Earth, in Spring, before they begin to ſhoot.

The 3d Sort, is at preſent, rare in *England*, though of late Years there have been ſeveral Plants raiſed in curious Gardens; but this Sort is not quite ſo hardy, I fear, as the common Cypreſs, for the Plants are frequently killed or greatly injured in ſevere Winters; in the hard Froſt of 1740, there was a large Tree of this Kind entirely killed in the Gardens of the Duke of *Richmond*, at *Goodwood* in *Suſſex*, which had been growing there ſeveral Years. There are great Plenty of theſe Trees at a Place called *Buſaco* near *Coimbra* in *Portugal*, where it is called the Cedar of *Buſaco*; there it grows to be a Timber Tree; ſo that from thence the Seeds may be eaſily procured.

This Tree grows naturally at *Goa*, from whence it was firſt brought to *Portugal*, where it has ſucceeded, and been propagated; formerly there were ſome Trees of this Sort growing in the Biſhop of *London*'s Garden at *Fulham*, where it paſſed under the Title of Cedar of *Goa*, by which Name it was ſent to the *Leyden* Garden.

The 5th Sort is a Native of *North America*, where it grows to a conſiderable Height, and affords an uſeful Timber to the Inhabitants. This Sort is extremely worth cultivating in *England*; for as it grows in a much colder Country, there is no Danger of its thriving well in the open Air in *England*; and being an Ever-green of regular Growth, will add to the Variety in Wilderneſs Quarters, or other Plantations of Ever-green Trees.

This Sort is propagated by Seeds, which ſhould be ſown in the Spring in Boxes or Tubs filled with light freſh Earth, and placed where they may enjoy the Morning Sun till 11 or 12 o'Clock; in dry Weather they ſhould be duly watered, and conſtantly kept clear from Weeds. In this Situation they may remain till *Michaelmas*, when they ſhould be removed to a warmer Place; for the Plants ſeldom appear till the following Spring, ſo that it will be proper to place the Boxes or Tubs near a South

Wall, Pale, or Hedge, during the Winter Seaſon; leſt, by being too much ſhaded, the Wet of the Winter Seaſon ſhould rot the Seeds. In the Spring following, if theſe Tubs or Boxes are placed on a moderate hot Bed, it will bring up the Plants very ſoon, and greatly forward their Growth; but as the Spring advances, they ſhould be inured to bear the open Air by degrees; and in *May* they muſt be taken out of the hot Bed, and placed in a ſheltered Situation, where they may enjoy the Morning Sun, being careful to keep them clear from Weeds, as alſo to water them duly in dry Weather. The following Winter it will be proper to remove the Tubs near a South Wall or Pale; for the Plants, being very young, are ſomewhat tenderer than they will be afterward. Toward the latter End of *March*, or the Beginning of *April*, juſt before they begin to ſhoot, they ſhould be carefully taken up out of the Boxes; and having prepared a Bed or two (according to the Quantity of Plants raiſed) of freſh Earth in a ſheltered Situation, they ſhould be planted therein in Rows about 18 Inches aſunder, and about a Foot Diſtance Plant from Plant in the Rows. This Work ſhould be done in cloudy Weather, when there is Rain; for in dry Weather, when Eaſterly Winds commonly blow at this Seaſon, it will be very dangerous to tranſplant them; ſo that it had better be deferred a Fortnight longer, till there is an Alteration of Weather, than hazard the Plants. When they are planted, they ſhould be watered to ſettle the Earth to their Roots; and then the Surface of the Ground ſhould be covered with Mulch, to prevent the Sun and Wind from penetrating to their Roots, for nothing is more injurious to theſe Plants, than to have their Fibres dried when they are tranſplanted; therefore the Plants ſhould not be taken out of the Tubs, till you are ready to place them in the Ground; for they will not bear to lie out of the Ground any Time without great Danger.

The Branches of this Tree are garniſhed with flat ever-green Leaves, reſembling thoſe of the *Arbor Vitæ*; and the Cones are no larger than thoſe of the Juniper, from which they are not eaſily diſtinguiſhed at a little Diſtance; but upon cloſely viewing, they are perfect Cones, having many Cells, like thoſe of the common Cypreſs. If theſe Trees are planted in a moiſt ſtrong Soil, they make great Progreſs; and may, in ſuch Situations, become profitable for Timber; but however this Tree may ſucceed for Timber, yet it will be a great Ornament to large Plantations of ever-green Trees, eſpecially in ſuch Places where there is naturally a proper Soil for them; becauſe, in ſuch Situations, there are not many Sorts of ever-green Trees which thrive well, eſpecially in cold Places; and by increaſing the Number of Sorts of theſe Ever-greens, we add to the Beauty of our Gardens and Plantations.

The 3d Sort ſends forth its Branches almoſt horizontally, ſo that they extend to a great Diſtance every Way; and the Trees are generally furniſhed with Branches from the Ground upward; but as theſe grow without much Order, the Trees have a very different Appearance from all the other Sorts. This grows to be a large Timber Tree in *Portugal*; but the largeſt I have ſeen in *England*, has not been above 15 Feet high; and the Side Branches of this were extended more than 8 Feet on every Side from the Stem. This Sort may be propagated from Seeds in the ſame Manner as the common Cypreſs; and the Plants ſhould be treated as hath been directed for them, with this Difference only, that it will be proper to cover theſe Plants, during the two firſt Winters, after they come up, eſpecially if the Froſt ſhould be ſevere, which might deſtroy them, if expoſed to it while they are young. This Sort may alſo be propagated by Cuttings, which if planted in Autumn, and ſcreened in Winter, will take Root; but it is generally two Years before they will be rooted enough to tranſplant, nor will the Plants, ſo raiſed, thrive ſo faſt as the Seedlings; therefore, when the Seeds can be obtained, that is the beſt Method to propagate this Tree. The *American* deciduous Cypreſs may alſo be propagated by Cuttings, as I have ſeveral Times tried; ſo that when Seeds cannot be had, this Method may be practiſed ſucceſsfully: I ſuppoſe the common Sort will alſo take from Cuttings; but this I have not experienced; ſo cannot recommend it to Practice.

Theſe Trees are ſo very ornamental, that no large Garden can be complete without many of them; and it is to theſe Trees that the *Italian* Villas owe a great Share of their Beauty: For there is no Tree ſo proper to place near Buildings; the pyramidal upright Growth of their Branches affords a picture ſque Appearance, and obſtructs not the View of the Building; and the dark green of their Leaves make a fine Contraſt with the white of the Building; ſo that, where-ever there are Temples or other Buildings erected in Gardens, there is no Sort of Tree ſo proper to place near them as theſe. In all the Landſchapes of *Italian* Villas, we ſee many Cypreſs Trees repreſented, which have a very agreeable Effect in the Picture; and the Trees, when rightly diſpoſed in a Garden, afford a no leſs agreeable Proſpect.

The Seeds of the 6th Sort were ſent me from the *Cape of Good Hope*, where the Trees grow naturally, and by the Account which I received with the Seeds, the Cones are black when ripe. The young Plants which I have raiſed from thoſe Seeds have looſe ſpreading Branches, cloſely garniſhed with narrow ſtrait Leaves, which come out oppoſite, and are alternately croſſing each other, theſe are near one Inch long, and of a light green Colour; they continue in Verdure all the Year. Theſe Plants being young, are too tender to thrive in the open Air in *England* as yet, but when they have obtained more Strength, it is very probable they may do well in warm Situations, I had two of theſe Plants growing in the full Ground, which were killed in the Winter 1756. But thoſe which were placed under a Frame, where there were no Covering of Glaſs, and only wooden Shutters, were not injured by the Cold, though the Earth of the Pots was frequently hard frozen.

CURCUMA. *Lin. Gen. Plant.* 6. *Cannacorus. Tourn. Inſt. R. H.* 367. Turmerick.

The *Characters* are;

The Flowers have each ſeveral Spathæ, which are ſingle and drop off; the Flower hath one Petal with a narrow Tube, which is cut at the Brim into 3 *Segments; it hath an oval pointed Nectarium of one Leaf, inſerted in the Sinus of the largeſt Segment of the Petal; it hath* 5 *Stamina,* 4 *of which are barren, and one fruitful, which is ſituated*

ſituated within the Nectarium, and hath the Appearance of a Petal, having a bifid Point, to which the Summit adheres. It hath a roundiſh Germen ſituated under the Flower, ſupporting a Style the Length of the Stamina, crowned by a ſingle Stigma. The Germen becomes a roundiſh Capſule having 3 Cells filled with roundiſh Seeds.

The *Species* are,

1. Curcuma *foliis lanceolato-ovatis, nervis lateralibus rariſſimis. Lin. Sp. Plant.* 2. *Curcuma* with Spear-ſhaped oval Leaves, having very few Nerves on the Sides. This is the *Curcnma radice rotundâ. C. B.* Turmerick with a round Root.

2. Curcuma *foliis lanceolatis nervis lateralibus numeroſiſſimis. Lin. Sp. Pl.* 2. *Curcuma* with Spear-ſhaped Leaves having many lateral Veins. This is the *Curcuma radice longâ. H. L.* 208. Turmerick with a long Root.

The 1ſt Sort hath a fleſhy jointed Root, ſomewhat like that of Ginger, but rounder; which ſends up ſeveral Spear-ſhaped oval Leaves, which riſe upwards of a Foot high; theſe have one longitudinal Mid-rib, and a few tranſverſe Nerves running from the Mid-rib to the Sides, they are of a Sea-green Colour; from between theſe ariſe the Flower Stalk, ſupporting a looſe Spike of Flowers of a pale yellowiſh Colour, incloſed in ſeveral different Spathæ or Sheaths, which drop off. They are never ſucceeded by Seeds in the Gardens here.

The 2d Sort hath long fleſhy Roots of a deep yellow Colour, which ſpread under the Ground, like thoſe of Ginger; they are about the Thickneſs of a Man's Finger, having many round knotty Circles; from which ariſe 4 or 5 large Spear-ſhaped Leaves ſtanding on long Foot Stalks; they have a thick longitudinal Mid-rib, from which a numerous Quantity of Veins are extended to the Sides; theſe Leaves are of a glaucus or Sea-green Colour. The Flowers grow in looſe ſcaly Spikes on the Top of the Foot Stalks, which ariſe from the larger Knobs of the Roots, and grow about a Foot high, they are of a yellowiſh red Colour, and ſhaped ſomewhat like thoſe of the *Indian* Reed.

Theſe Plants grow naturally in *India*, from whence the Roots are brought to *Europe* for Uſe. Theſe are very tender, ſo will not live in this Country, unleſs they are placed in a warm Stove. As they do not produce Seeds in *England*, they are only propagated by parting their Roots; the beſt Time for removing and parting theſe Roots is in Spring before they put out new Leaves, for the Leaves of theſe Plants decay in Autumn, and the Roots remain inactive till the Spring, when they put out freſh Leaves. Theſe Roots ſhould be planted in rich Kitchen Garden Earth, and the Pots ſhould be conſtantly kept plunged in a Bark Bed in the Stove. In the Summer Seaſon when they are in a growing State, they will require to be frequently refreſhed with Water, but it ſhould not be given in large Quantities; they ſhould alſo have a large Share of Air admitted to them in warm Weather; when the Leaves are decayed, they ſhould have very little Wet, and muſt be kept in a warm Temperature of Air, otherwiſe they will periſh. Theſe Plants uſually flower in *Auguſt*, but it is only the ſtrong Roots which flower, ſo they muſt not be parted ſmall, where the Flowers are deſired.

CURRAN-TREE. *See* Ribes.

CURURU. *See* Paullinia.

CUSPIDATED PLANTS are thoſe whoſe Leaves are pointed like a Spear.

CUSTARD-APPLE. *See* Annona.

CYANUS. *See* Centauria.

CYCLAMEN. *Lin. Gen. Pl.* 184. *Tourn. Inſt. Cyclamen*, in French *Pain dé Pourceau.* [Κυκλάμινος, of Κύκλος, *Gr.* a Circle; becauſe the Root of this Plant is orbicular; it is called Sowbread, becauſe the Root is round like a Loaf, and the Sows eat it.] Sowbread.

The *Characters* are,

The Flower hath a roundiſh permanent Empalement of one Leaf divided into 5 Parts at the Top. It hath one Petal with a globular Tube which is much larger than the Empalement, the upper Part is divided into 5 large Segments which are reflexed; it hath 5 ſmall Stamina ſituated within the Tube of the Petal, terminated by acute Summits connected in the Neck of the Tube. It hath a roundiſh Germen ſupporting a ſlender Style, which is longer than the Stamina and crowned by an acute Stigma. The Germen becomes a globular Fruit with one Cell opening in 5 Parts at the Top, incloſing many oval angular Seeds.

The *Species* are,

1. Cyclamen *foliis haſtato-cordatis angulatis. Cyclamen* with Spear-pointed Heart-ſhaped Leaves, which are angular. This is the *Cyclamen hederæ folio. C. B. P.* 306. Sowbread with an Ivy Leaf.

2. Cyclamen *foliis orbiculato-cordatis, infernè purpuraſcentibus. Cylamen* with round Heart-ſhaped Leaves, purple on their under Side.

3. Cyclamen *foliis cordatis ſerratis. Cyclamen* with ſawed, Heart-ſhaped Leaves. This is the Heart-ſhaped Spring, or *Perſian Cyclamen.*

4. Cyclamen *hyeme & vere florens folio anguloſo amplo, flore albo, baſi purpurea, Perſicum dictum. H. R. Par.* Winter and Spring flowering Sowbread, with a large angular Leaf, and a white Flower purple at the Bottom; called *Perſian Cyclamen.*

5. Cyclamen *radice inæquali, foliis orbiculatis. Cyclamen* with an unequal Root and round Leaves. This is the *Cyclamen radice caſtaneæ magnitudinis. C. B. P.* Sowbread with a Root the Size of a Cheſtnut.

6. Cyclambn *Hyemale, orbiculatis foliis infernè rubentibus, purpuraſcente flore Coum Herbariorum. H. R. Par.* Winter *Cyclamen* with orbicular Leaves, red on their under Side, and a purpliſh Flower; the *Coum* of the Herbaliſts.

The 1ſt Sort is the moſt common in the *Engliſh* Gardens; this grows naturally in *Auſtria*, *Italy*, and other Parts of *Europe*, ſo will thrive in the open Air in *England*, and is never killed by the Froſt. It hath a large orbicular compreſſed Root, from which ariſe a great Number of angular Heart-ſhaped Leaves, on ſingle Foot Stalks, which are 6 or 7 Inches long; theſe Leaves are marked with black in their Middle, the Flowers appear before the Leaves, riſing immediately from the Root, with long fleſhy Foot Stalks. This appears in *Auguſt* and *September*, and ſoon after the Leaves come out, and continue growing all the Winter and Spring till *May*, when they begin to decay, and in *June* they are entirely dried up; after the Flowers are fallen, the Foot Stalks twiſt up like a Screw, encloſing the Germen in the Center, and lie cloſe to the Surface of the Ground between the Leaves,

Leaves, which ſerves as a Protection to the Seed; this Germen becomes a round fleſhy Seed Veſſel with one Cell incloſing ſeveral angular Seeds. The Seeds ripen in *June*, and ſhould be ſown in *Auguſt*. There are two Varieties of this, one with a white, the other with a purpliſh Flower, which appear at the ſame Time.

The 2d Sort flowers in Autumn; this is at preſent very rare in *England*; the Leaves of this are large orbicular and Heart-ſhaped at their Baſe, and of a purple Colour on their under Side, the Leaves and Flowers come up from the Root at the ſame Time, the Flowers are of a purpliſh Colour and their Bottoms of a deep red. It flowers late in Autumn, and requires Protection from the Froſt in Winter.

The 3d Sort hath ſtiff Heart-ſhaped Leaves ſawed on their Edges, theſe have ſtrong fleſhy Foot Stalks near 6 Inches long, of a purple Colour, as are alſo the Veins of the Leaves on their under Side, but the upper Side is veined and marbled with white. The Flowers riſe with ſingle Foot Stalks from the Root; theſe are pure white with with a bright purple Bottom, the Petal is divided into 9 Segments to the Bottom, which are twiſted and reflexed backward like the other Sorts. This flowers in *March* and *April*, and the Seeds ripen in *Auguſt*.

The 4th Sort is commonly called the *Perſian Cyclamen*; it hath large angular Heart-ſhaped Leaves, whoſe Edges are entire; they are veined and marbled with white on their upper Side, and ſtand on pretty long Foot Stalks, the Flowers are large, of a pale purple Colour, with a bright red or purple Bottom. Theſe appear in *March* and *April*, and the Seeds ripen in *Auguſt*.

The 5th Sort hath a ſmall irregular Root, not larger than a Nutmeg, the Leaves are orbicular and ſmall, the Flowers are of a fleſh Colour, ſmall, and have purple Bottoms. They appear in Spring, but rarely produce Seeds in *England*.

The 6th Sort is not ſo tender as the four laſt mentioned, ſo may be planted in warm Borders, and, if covered in hard Froſt, will thrive and flower very well. This hath plain orbicular Leaves, which have ſhorter and weaker Foot Stalks than any of the other; their under Sides are very red the Beginning of Winter, but that Colour goes off in Spring; their upper Sides are ſmooth, of a lucid green, and ſpread open flat, whereas the other Sorts are hollowed, and reflexed at their Baſe. The Flowers are a very bright purple, and appear in the Middle of Winter, at a Time when there are few others, which renders the Plants more valuable. The Seeds ripen the End of *June*.

There are ſeveral other Varieties of this Plant, which chiefly differ in the Colour of their Flowers, particularly among the *Perſian* Kind, of which there is one with an entire white Flower, which ſmells very ſweet; but as theſe are accidental Variations, I have not enumerated them, thoſe which are here mentioned being undoubtedly diſtinct Species; for I have many Years propagated them from Seeds, and have not found them vary, nor have I heard that any other Perſon has obſerved either of them alter farther than varying their Colours. Tho' Dr *Linnæus* ſuppoſes them but one Species, it is well known that the firſt Sort will endure the greateſt Froſt in the open Air, whereas all the *Perſian* Sorts are tender and require Shelter in Winter.

All the Sorts are propagated by Seeds, which ſhould be ſown ſoon after they are ripe, in Boxes, or Pots filled with light Kitchen Garden Earth mixed with a little Sand, and covered about half an Inch deep, placing them where they may have only the Morning Sun till the Beginning of *September*, when they may be removed to a warm Expoſure. Thoſe of the 1ſt Sort may be plunged into the Ground, cloſe to a South Wall, a Pale or Reed Hedge in *October*, where, if it ſhould be be very ſevere Froſt, it will be proper to cover them either with Mats or Peaſe Haulm, but in common Winters they will not require any Covering. The Pots or Tubs in which the *Perſian* Kinds are ſown, ſhould then be placed under a common hot Bed Frame, where they may be protected from Froſt and hard Rains, but in mild Weather the Glaſſes may be taken off every Day to admit freſh Air to them. The 1ſt Sort will come up about *Chriſtmas*, if the Seeds were ſown in *Auguſt*, and their Leaves will continue green till *May*; thoſe of the *Perſian* Kinds will come up early in Spring, and continue green till *June*, when they begin to decay; then they ſhould be removed to an Eaſt Aſpect, where they will have only the Morning Sun, in which Situation they may remain till the Middle of *Auguſt*, during which Time they ſhould have very little Water, for now the Roots are in an inactive State, when much Wet will rot them. The Pots and Tubs in which they are ſown, muſt be conſtantly kept clean from Weeds, for if the Weeds are permitted to grow, their Roots will cloſely entangle with thoſe of the *Cyclamen*, ſo that in pulling out the Weeds, the other Roots will be drawn out with them. In the Beginning of *October*, there ſhould be ſome freſh Earth ſpread over the Tubs or Pots, which ſhould be removed again into Shelter, as before, and the following Summer they muſt be managed in the ſame Way till their Leaves decay, when they ſhould be carefully taken up, and thoſe of the 1ſt Sort placed in a warm Border at 3 or 4 Inches Diſtance, but the other Sorts muſt be planted in Pots to be ſheltered in Winter.

The 3d, 4th, and 5th Sorts, are more impatient of Cold and Wet than the 3 other; theſe muſt conſtantly be preſerved in Pots filled with ſandy light Earth, and houſed in Winter; but ſhould be placed near the Glaſſes, where they may enjoy as much free open Air as poſſible, when the Weather will permit; for if they are crowded under other Plants, and are kept too cloſe, they are very ſubject to mould and rot; nor ſhould they have much Water in Winter, which is alſo very injurious to them; but whenever they want Water, it ſhould be given ſparingly. In Summer theſe Plants may be expoſed to the open Air, when their green Leaves will decay; at which Time you ſhould remove them to a Place, where they may have the Morning Sun until 11 o'Clock; but during the Time the Roots are deſtitute of Leaves, they ſhould have very little Water, becauſe at that Seaſon they are not capable of diſcharging the Moiſture. This is alſo the proper Seaſon to tranſplant the Roots, or to freſh earth them; and as the Autumn comes on, and the Heat decreaſes, they may be removed into Places more expoſed to the Sun, where they may remain until *October* before they need be houſed.

Toward *Chriſtmas*, if the Roots are in good Health, the 6th Sort will begin to flower, and continue producing freſh Flowers until the Middle of *February*; theſe will be ſucceeded by the *Perſian* Sorts, which continue till *May*; but if you intend to have any Seeds, you muſt let the Pots be placed ſo as to receive a great Share of freſh Air; for if their Flowers are drawn up in the Houſe, they ſeldom produce any Seeds. Theſe Seeds are ripe about *July*, when they ſhould be immediately ſown in Pots or Caſes of good light undunged Earth; which ſhould be ſheltered in Winter under a Frame, and expoſed in Summer as directed for the older Roots; obſerving to remove them into Pots at a wider Diſtance when they are two Years old; and ſo from Time to Time, as their Roots increaſe in Bulk, you muſt give them more Room; in about 4 or 5 Years they will begin to flower, when you ſhould let each Root have a ſeparate Pot, which at firſt may be ſmall; but when the Roots are grown large, they muſt be put into larger Pots

Theſe Sorts have been planted under warm Walls in the full Ground, where in mild Winters they have done very well, but in ſevere Froſt all thoſe Roots have been deſtroyed; therefore, whenever theſe Roots are planted in an open Border, there ſhould be common hot Bed Frames placed over them in Winter, that in bad Weather they may be covered, to protect them from Froſt: And where they are thus managed, the Plants will produce more Flowers, and thoſe much fairer, than what are produced from the Roots in Pots; from theſe there may always be good Seeds expected; therefore thoſe who are curious in Flowers, ſhould have a Border framed over on Purpoſe for theſe, and the *Guernſey* and *Belladonna* Lilies, with ſome other of the curious bulbous-rooted Flowers; in which Border there may be many of theſe curious Flowers cultivated, to more Advantage than in any other Method now practiſed.

CYDONIA. *Tourn. Inſt. R. H.* 632. *Tab.* 405. *Pyrus. Lin. Gen. Plant.* 550. The Quince Tree.

The *Characters* are,

The Flower is compoſed of 5 *large roundiſh concave Petals, inſerted in the permanent Empalement of one Leaf. The Germen is ſituated under the Flower, and ſupports* 5 *ſlender Styles, crowned by ſingle Stigmas; theſe are attended by near* 20 *Stamina, not ſo long as the Petals; the Germen becomes a roundiſh Fruit, which is fleſhy and divided into* 5 *Cells, in which are lodged ſeveral hard Seeds.*

The *Species* are,

1. CYDONIA *foliis oblongo-ovatis ſubtus tomentoſis, pomis oblongis baſi productis.* Quince Tree with oblong oval Leaves, woolly on their under Side, and an oblong Fruit lengthened at the Baſe. This is the *Cydonia fructu oblongo læviori. Tourn. Inſt.* Quince with an oblong ſmoother Fruit, commonly called the Pear Quince.

2. CYDONIA *foliis ovatis, ſubtus tomentoſis, pomis rotundioribus.* Quince Tree with oval Leaves, woolly on their under Side, and a rounder Fruit. This is the *Cydonia fructu breviore & rotundiore.* Quince with a rounder and ſhorter Fruit, called the Apple Quince.

3. CYDONIA *foliis obverſè-ovatis ſubtus tomentoſis* This is the *Cydonia latifolia Luſitanica. Tourn. Inſt.* 633. Broad leaved *Portugal* Quince.

There are other Varieties of this Fruit propagated in Fruit Gardens, and in the Nurſeries for Sale, one of which is ſoft and eatable; there is another with a very aſtringent Fruit, and a third with a very ſmall Fruit, cottony all over, and ſcarce worth keeping: Theſe I ſuppoſe are ſeminal Variations, but the 3 Sorts before enumerated, I take to be diſtinct Species, having propagated them by Seeds, and have not found them vary.

The *Portugal* Quince is the moſt valuable, the Pulp of it turning to a fine purple when ſtewed or baked, and becomes much ſofter and leſs auſtere than the others, ſo much better for making Marmalade.

They are all eaſily propagated, either by Layers, Suckers, or Cuttings, which muſt be planted in a moiſt Soil. Thoſe raiſed from Suckers are ſeldom ſo well rooted as thoſe which are obtained from Cuttings or Layers; and are ſubject to produce Suckers again in greater Plenty, which is not ſo proper for Fruit bearing Trees. The Cuttings ſhould be planted early in Autumn, and in dry Weather muſt be often watered to encourage their Rooting. The 2d Year after they ſhould be removed into a Nurſery at 3 Feet Diſtance Row from Row, and one Foot aſunder in the Rows, where they muſt be managed as directed for Apples. In 2 or 3 Years Time theſe Trees will be fit to tranſplant, where they are to remain for good; which ſhould be either by the Side of a Ditch, River, or in ſome other moiſt Place, where they will produce a greater Plenty, and much larger Fruit than in a dry Soil; though thoſe in the dry Soil will be better taſted, and earlier ripe. Theſe Trees require very little pruning; the chief Thing to be obſerved is, to keep their Stems clear from Suckers, and cut off ſuch Branches as croſs each other; likewiſe all upright luxuriant Shoots from the Middle of the Tree ſhould be taken entirely out, that the Head may not be too much crowded with Wood, which is of ill Conſequence to all Sorts of Fruit Trees. Theſe Sorts may alſo be propagated by budding or grafting upon Stocks raiſed by Cuttings, ſo that the beſt Sorts may be cultivated in greater Plenty this Way, than by any other Method; and theſe Trees will bear Fruit much ſooner and be more fruitful, than thoſe which come from Suckers or Layers.

Theſe are alſo in great Eſteem for Stocks to graft and bud Pears on; which for Summer and Autumn Fruits are a great Improvement to them, eſpecially thoſe deſigned for Walls and Eſpaliers: For the Trees on theſe Stocks do not ſhoot ſo vigorouſly as thoſe on free Stocks, may be kept in leſs Compaſs, and are ſooner diſpoſed to bear Fruit: But hard Winter Fruits do not ſucceed ſo well on theſe Stocks, their Fruit being very ſubject to crack, and are commonly ſtony, eſpecially all the breaking Pears; therefore theſe Stocks are only proper for the melting Pears, and for a moiſt Soil. The beſt Stocks are thoſe raiſed from Cuttings or Layers.

As the Pear will take upon the Quince by grafting or budding, and ſo *vice verſâ*, we may conclude there is a near Alliance between them; but as neither of theſe will take on the Apple, nor that upon either of theſe, ſo we ſhould ſeparate them under different Genera, as will be further mentioned under the Article *Malus*.

CYNANCHUM. *Lin. Gen. Plant.* 268. *Apocynum. Tourn. Inſt.* 91. *Periploca. Tourn. Inſt.* 93. *Tab.* 20.

The *Characters* are,

The Flower hath one Petal, it hath ſcarce any Tube, but is ſpread open, plain, and divided into 5 Parts; this hath a ſmall, erect, permanent Empalement of one Leaf, divided into 5 Parts; the Nectarium, which is ſituated in the Center of the Flower, is erect, cylindrical, and the Length of the Petal. It hath 5 Stamina, which are parallel to the Nectarium, and of the ſame Length, terminated by Summits, which reach to the Mouth of the Petal. It hath an oblong bifid Germen, with ſcarce any Style, crowned by 2 obtuſe Stigmas; the Empalement becomes a Capſule with 2 oblong pointed Leaves, having a Cell which opens longitudinally, and is filled with Seeds lying over each other imbricatim, and are crowned with long Down.

The *Species* are,

1. CYNANCHUM *caule volubili herbaceo, foliis cordato-oblongis glabris. Hort. Cliff.* 79. *Cynanchum* with a twining herbaceous Stalk, and oblong ſmooth Heart-ſhaped Leaves. This is the *Periploca Monſpeliaca foliis acutioribus. Tourn. Inſt.* 93. *Montpelier Periploca* with acute pointed Leaves, commonly called *Montpelier* Scammony.

2. CYNANCHUM *caule volubili herbaceo, foliis reniformi-cordatis acutis. Hort. Cliff.* 79. *Cynanchum* with a twining herbaceous Stalk, and Kidney Heart-ſhaped pointed Leaves. This is the *Periploca Monſpeliaca foliis rotundioribus. Tourn. Inſt. Montpelier Periploca* with rounder Leaves, or round leaved *Montpelier* Scammony.

3. CYNANCHUM *caule volubili infernè ſuberoſo fiſſo, foliis cordatis acuminatis. Hort. Cliff. Cynanchum* with a twining Stalk, fungous, and having Fiſſures on the under Side, and Heart-ſhaped pointed Leaves. This is the *Periploca Carolinienſis, flore minore ſtellato. Hort. Elth. Carolina Periploca* with a ſmaller ſtarry Flower.

4. CYNANCHUM *caule volubili fruticoſo, infernè ſuberoſo fiſſo, foliis ovato-cordatis. Hort. Cliff.* 79. *Cynanchum* with a ſhrubby twining Stalk, whoſe lower Part is fungous and has Fiſſures, and oval Heart-ſhaped Leaves. This is the *Periploca ſcandens, folio citri, fructu maximo. Plum. Cat.* 2. *Periploca* with a climbing Stalk, a Citron Leaf, and a large Fruit.

5. CYNANCHUM *caule erecto divaricato, foliis cordatis glabris. Hort. Cliff.* 79. *Cynanchum* with an upright divaricated Stalk, and Heart-ſhaped ſmooth Leaves. This is the *Apocynum folio ſubrotundo. C. B. P.* 302. Dogſbane with a roundiſh Leaf.

6. CYNANCHUM *caule volubili fruticoſo, foliis cordatis acutis aſperis, floribus lateralibus, Cynanchum* with a twining ſhrubby Stalk, Heart-ſhaped pointed rough Leaves, and Flowers growing from the Sides of the Stalks. This is the *Apocynum ſcandens floribus amplis patulis luteis. Houſt. Mſſ.* Climbing Dogſbane with large yellow ſpreading Flowers.

7. CYNANCHUM *caule ſcandente, foliis cordatis acuminatis glabris. Cynanchum* with a climbing Stalk, and ſmooth Heart-ſhaped pointed Leaves. This is the *Apocynum Bithynicum, arbores altiſſimas ſcandens, folio ſubrotundo. Tourn. Cor.* Dogſbane of *Bithynia* climbing to the Tops of the talleſt Trees, having a roundiſh Leaf.

The 1ſt and 2d Sorts grow naturally about *Montpelier*; theſe have perennial creeping Roots, but annual Stalks, which decay to the Root every Autumn, and riſe afreſh in Spring, which twiſt themſelves like Hops, round whatever Plants are near them, and riſe to the Height of 5 or 6 Feet; the firſt of theſe is garniſhed with oblong Heart-ſhaped ſmooth Leaves ending in acute Points, and are placed by Pairs oppoſite on long Foot Stalks; the Flowers come out in ſmall Bunches from the Wings; they are of a dirty white Colour, and divided into 5 acute Segments, which ſpread open in Form of a Star. Theſe appear in *June* and *July*, but are not ſucceeded by Seed Veſſels in *England*, which may be occaſioned by their Roots creeping ſo far under Ground; for moſt of thoſe Plants which propagate themſelves ſo much by their Roots, become barren of Seeds, eſpecially if their Roots have full Liberty to extend.

The 2d Sort differs from the 1ſt in the Shape of its Leaves, which are broader and rounder at their Baſe. The Roots of this are very thick, running deep into the Ground, and extend far on every Side, ſo that where this Plant hath got Poſſeſſion of the Ground it is not eaſily extirpated, for every Piece of the Root will ſhoot, which may happen to be left in the Ground. Both theſe Plants abound with a milky Juice like the Spurge, which iſſues out where they are broken; and this milky Juice when concreted, has been frequently ſold for Scammony.

Theſe Plants propagate ſo faſt by their creeping Roots, that few will admit them into Gardens: The Roots may be tranſplanted any Time after their Stalks decay, till they begin to ſhoot in the Spring.

The 3d Sort grows naturally in *Carolina*, from whence the Seeds were brought to *England*; this is a perennial Plant with twining hairy Stalks, which, if ſupported, will riſe 6 or 7 Feet high; the lower Part of the Stalks are covered with a thick fungous Bark, ſomewhat like Cork, which is full of Fiſſures; theſe Stalks are ſlender, and garniſhed at each Joint with two oblong Heart-ſhaped pointed Leaves, ſtanding on long hairy Foot Stalks. The Flowers are produced in ſmall Bunches at the Wings of the Leaves, theſe are Star-ſhaped and green when they firſt appear, but afterward fade to a worn-out purple Colour. They appear in *July* and *Auguſt*, but are not ſucceeded by Seeds in *England*.

This Plant will live in the open Air in *England*, if planted in a dry Soil and warm Situation. It may be propagated by laying down ſome of the young Shoots about *Midſummer*, which, if they are now and then refreſhed with Water, will put out Roots, ſo may be tranſplanted in Autumn, where they are deſigned to remain. The Roots ſhould be covered in Winter with ſome rotten Tan to keep out the Froſt, otherwiſe in ſevere Winters they are liable to be deſtroyed.

The 4th Sort grows naturally in *Jamaica*, from whence the Seeds were ſent me; this riſes with a twining Stalk to the Height of 20 Feet or more, provided it hath Support; the lower Part of the Stalks are covered with a thick fungous Bark, full of Fiſſures, which gape open; the Leaves are oblong and ſmooth, and placed by Pairs oppoſite, ſtanding on long Foot Stalks: The Flowers are produced from the Wings of the Leaves in ſmall Bunches, they are Star-ſhaped, of a yellowiſh green Colour, but are not ſucceeded by Pods in *England*.

This Sort is tender, ſo will not thrive in this Country unleſs placed in a warm Stove, and treated as other tender Plants from the ſame Country; as it abounds with a milky Juice, the Plants muſt have little Water in Winter. It may be propagated by laying down the young Shoots, which in 3 or 4 Months will put out Roots and may then be tranſplanted into Pots filled with light ſandy Earth, and plunged in the Tan Bed in the Bark Stove, where the Plants ſhould continue all the Year.

The 5th Sort grows naturally in *Syria*; this is a perennial Plant, which riſes with ſlender upright Stalks about 3 Feet high, garniſhed with broad ſmooth Heart-ſhaped Leaves ending in Points, placed by Pairs oppoſite; the Flowers come out from the Wings of the Leaves in ſmall Bunches ſtanding on branching Foot Stalks; theſe are ſmall and white, greatly reſembling thoſe of the common white *Aſclepias*, or Swallow-wort, theſe are ſucceeded by oblong taper Pods, filled with flat Seeds crowned with Down, but theſe rarely ripen in this Country.

It is propagated by parting the Root; the beſt Time for doing this or tranſplanting the Roots, is in Spring before they ſhoot: This requires a warm Situation, otherwiſe it will not live abroad in *England*.

The 6th Sort grows naturally at *La Vera Cruz*, from whence the Seeds were ſent me; this hath a ſhrubby twining Stalk, which twiſts about whatever Prop is near it, and riſes 20 Feet or upward; the Stalks are very ſlender, armed with ſmall ſtinging Hairs, and garniſhed with broad Heart-ſhaped Leaves, which end in acute Points; theſe are placed by Pairs at each Joint, which are far diſtant, and have ſlender Foot Stalks; they are covered with rough Hairs on their under Side; the Flowers are produced in ſmall Cluſters, ſitting cloſe to the Side of the Stalks; they are pretty large, yellow, and Star-ſhaped, ſpreading open to the Bottom; they are ſucceeded by long ſwelling Pods, filled with flat Seeds lying *imbricatim*, which are crowned with long Down.

This Sort is tender, ſo requires the ſame Treatment as the 4th, and is propagated the ſame Way.

The 7th Sort grows naturally in *Bithynia*, from whence Dr. *Tournefort* ſent the Seeds to the Royal Garden at *Paris*, where they ſucceeded. Sir *George Wheeler* alſo gathered this Plant in his Travels, and mentions it by the Title of *Periploca latifolia*, or broad leaved Silk. This riſes with a ſtrong round Stalk, which faſtens itſelf to a neighbouring Tree, and mounts to the Top; the Stalks are garniſhed with broad Heart-ſhaped ſmooth Leaves, ſtanding on long Foot Stalks; theſe are generally placed oppoſite by Pairs, but ſometimes there are 3 Leaves ariſing from the ſame Joint, one of which hath a much longer Foot Stalk than the other two; the Leaves are 2 Inches and a Half long, and almoſt as broad at their Baſe, terminating in acute Points: The Flowers come out from the Wings of the Leaves, ſtanding on pretty long branching Foot Stalks; they are Star-ſhaped, and of a pale yellowiſh Colour. They appear in *July* and *Auguſt*, but are not ſucceeded by Seeds in *England*.

This Sort muſt be planted in a warm Situation, otherwiſe it will not live through the Winter in *England*. It requires the ſame Treatment as the 5th Sort, but may be propagated by laying down the young Shoots in the ſame Manner as the 4th Sort. Where theſe are preſerved in Gardens, there ſhould be tall Props put down by each Plant to ſupport them, otherwiſe they will lie on the Ground, and twiſt about the Plants which grow near them, ſo will be troubleſome and unſightly.

CYNARA. *Lin. Gen. Plant.* 835. *Cinara. Tourn. Inſt. R. H.* 442. Artichoke, in *French Artichaut*.

The *Characters* are,

It hath a compound Flower, made up of many hermaphrodite Florets, included in one common ſcaly Empalement, which is ſwollen in the Bottom. The Florets are tubulous, equal, and uniform, divided at the Top into 5 narrow Segments. Theſe have 5 ſhort hairy Stamina, terminated by cylindrical Summits, which have 5 Indentures; at the Bottom of each is ſituated an oval Germen, ſupporting an oblong Style, crowned by an oblong indented Stigma. The Germen becomes a ſingle oblong compreſſed four cornered Seed, crowned with long hairy Down.

The *Species* are,

1. CYNARA *foliis ſubſpinoſis, pinnatis indiviſiſque, calycinis ſquamis ovatis. Lin. Sp. Pl.* 827. Artichoke with ſpiny Leaves, winged and undivided, and an oval ſcaly Empalement. This is the *Cynara hortenſis aculeata. C. B. P.* 383. The green or *French* Artichoke.

2. CYNARA *foliis pinnatis inermibus, calycinis ſquamis obtuſis emarginatis.* Artichoke with winged Leaves having no Spines, and obtuſe indented Scales to the Empalement. This is the *Cynara hortenſis foliis non aculeatis. C. B. P.* 383. The Globe Artichoke.

3. CYNARA *foliis ſpinoſis, omnibus pinnatifidis, calycinis ſquamis ovatis. Lin. Sp. Plant.* 827. *Cynara* with prickly Leaves, all ending in winged Points, and oval Scales to the Empalement. This is the *Cynara ſpinoſa, cujus pediculi eſitantur.* The Cardoon, in *French Chardon*.

4. CYNARA *foliis ſpinoſis, pinnatifidis, ſubtus tomentoſis, calycibus ſquamis ſubulatis.* *Cynara* with winged prickly Leaves, woolly on their under Side, and Awl-ſhaped Scales to the Empalement. This is the *Cynara ſylveſtris Bœtica. Cluſ. Cur.* Wild Artichoke of *Spain*.

The 1ſt Sort is commonly known by the Title of *French* Artichoke, being the Sort which is moſt commonly cultivated in *France*, and is the only Kind in *Guernſey* and *Jerſey*; the Leaves are terminated by ſhort Spines, the Head is oval, and the Scales do not turn inward at the Top, like thoſe of the Globe Artichoke, they are alſo of a green Colour; the Bottoms of theſe are not near ſo thick of Fleſh as thoſe of the Globe, and have a perfumed Taſte, which to many Perſons is very diſagreeable, ſo that it is ſeldom cultivated in the Gardens near *London*, where the Globe or red Artichoke is the only Sort in Eſteem. The Leaves of this are not prickly, the Head is globular, a little compreſſed at Top, the Scales lie cloſe over each other, and their Ends turn inward, ſo as to cloſely cover the Middle.

The Culture of theſe having been fully treated under the Article *Artichoke*, the Reader is deſired to turn to that, to avoid Repetition.

The *Chardoon*, or *Cardoon*, is propagated in the Kitchen Gardens to ſupply the Markets; this is annually raiſed from Seeds, which ſhould be ſown on a Bed of light Earth in *March*; and when the Plants come up, they ſhould be thinned where too cloſe; and if the Plants are wanted, thoſe which are drawn out may be tranſplanted into a Bed at about 3 or 4 Inches Diſtance, where they ſhould remain till they are tranſplanted out for good. Theſe young Plants muſt be kept clean from Weeds, and in *June* tranſplanted on a moiſt rich Spot of Ground at about 4 Feet aſunder every Way; the Ground ſhould be well dug before they are planted, and the Plants well watered until they have taken new Root, after which the Ground muſt be kept very clean from Weeds, to encourage the Growth of the Plants; as they advance in Height, there ſhould be ſome Earth drawn up about each Plant; and when they are fully grown, their Leaves ſhould be cloſely tied up with a Hay Band, and the Earth drawn up in Hills about each Plant, almoſt to their Tops, being careful to keep the Earth from falling between the Leaves, which may occaſion the rotting of the Plants. This Earth ſhould be ſmoothed over the Surface that the Wet may run off, and not fall into the Center of the Plants, which will alſo cauſe them to rot; in about 5 or 6 Weeks after the Plants have been thus earthed, they will be blanched enough for Uſe; ſo that if a Succeſſion of them are wanted for the Table, there ſhould be but few Plants earthed up at one Time, but every Week or ten Days, there may be a Part of them earthed, in Proportion to the Quantity deſired.

Toward the Middle, or latter End of *November*, if the Froſt ſhould be ſevere, it will be proper to cover the Tops of the Plants that remain with Peaſe Haulm, or Straw, to prevent the Froſt from penetrating to the tender Leaves; but this ſhould be taken off again in mild Weather; if this Care is taken, the Plants may be preſerved for Uſe all the Winter.

If a few of the Plants are planted out in a warm Situation to ſtand for Seed, they ſhould not be blanched, but only in very hard Froſt ſome light Litter, or Peaſe Haulm, may be laid round them, which ſhould be removed in Spring, and the Ground gently dug between the Plants, which will not only deſtroy the Weeds, but alſo encourage the Roots to ſhoot out on every Side, whereby their Stems will be ſtronger; theſe will flower about the Beginning of *July*, and if the Seaſon proves dry, their Seeds will ripen in *September*, but in cold wet Seaſons, theſe Seeds will not come to Maturity in *England*.

The 4th Sort grows naturally in *Spain*, alſo on the *African* Shore, and is preſerved in Gardens for Variety; this is very like the 3d Sort, but the Stems of the Leaves are much ſmaller, and do not grow more than Half ſo high. The Heads of this have ſome Reſemblance to thoſe of the *French* Artichoke, but have no Meat, or fleſhy Subſtance in their Bottoms; this may be planted in the ſame Manner as the 3d Sort, at about 3 or 4 Feet apart, and will require no other Treatment than keeping them clean from Weeds; the ſecond Year they will flower, and, if the Seaſon proves dry, they will ripen their Seeds in *September*, and the Plants generally decay the following Winter.

CYNOGLOSSUM. *Lin. Gen. Pl.* 168. *Tourn. Inſt. Omphalodes. Tourn.* 140. [Κυνόγλωσσον, of Κυνός, and Γλῶσσα, *Gr.* the Tongue, becauſe the Leaves reſemble a Dog's Tongue]. Hounds Tongue, in *French*, *Langue de Chien*.

The *Characters* are,

It hath a Funnel-ſhaped Flower of one Leaf, with a long Tube, and ſhort Brim, ſlightly cut into 5 *Parts, and is ſhut up at the Chaps; this hath an oblong permanent Empalement, cut into* 5 *acute Parts. The Flower hath* 5 *ſhort Stamina, in the Chaps of the Petal, terminated by roundiſh Summits, and at the Bottom of the Tube are ſituated* 4 *Germina, between which ariſes a permanent Style, the Length of the Stamina, crowned by an indented Stigma; the Empalement becomes* 4 *Capſules, incloſing* 4 *oval Seeds.*

The *Species* are,

1. CYNOGLOSSUM *ſtaminibus corollâ brevioribus, foliis lato-lanceolatis tomentoſis ſeſſilibus. Lin. Sp. Plant.* 134. Hounds Tongue with Stamina ſhorter than the Petal, and broad Spear-ſhaped woolly Leaves, which ſit cloſe to the Stalk. This is the *Cynogloſſum majus vulgare. C. B. P.* 257. Common Greater Hounds Tongue.

2. CYNOGLOSSUM *ſtaminibus corollam æquantibus. Hort. Upſal.* 33. Hounds Tongue with Stamina equaling the Petal. This is the *Cynogloſſum montanum maximum. Tourn. Inſt.* Greateſt Mountain Hounds Tongue.

3. CYNOGLOSSUM *Creticum latifolium fœtidum. C. B. P.* 257. Broad-leaved ſtinking Hounds Tongue of *Crete*.

4. CYNOGLOSSUM *Creticum, argenteo anguſto folio. C. B. P.* 257. Hounds Tongue of *Crete*, with a narrow ſilvery Leaf.

5. CYNOGLOSSUM *Virginianum flore minimo albo. Baniſter. Cat. Virginia* Hounds Tongue with a very ſmall white Flower.

6. CYNOGLOSSUM *caule erecto ramoſo, foliis lanceolatis ſcabris ſeſſilibus, ſpicis florum longiſſimis.* Hounds Tongue with an upright branching Stalk, Spear-ſhaped rough Leaves ſitting cloſe, and very long Spikes to the Flowers. This is the *Omphalodes Luſitanica elatior Cynogloſſi folio. Tourn. Inſt. R. H.* 143. Taller *Portugal* Navelwort with a Hounds Tongue Leaf.

7. CYNOGLOSSUM *foliis lineari-lanceolatis glabris. Hort. Cliff.* 47. Hounds Tongue with ſmooth, narrow, Spear-ſhaped Leaves. This is the *Omphalodes Luſitanica lini folio. Tourn. Inſt.* 140. *Portugal* Navelwort with a Flax Leaf, commonly called *Venus* Navelwort.

8. CYNOGLOSSUM *repens, foliis radicalibus cordatis. Hort. Cliff.* 47. Creeping Hounds Tongue, whoſe lower Leaves are Heart-ſhaped. This is the *Omphalodes pumila verna ſymphyti folio. Tourn. Inſt.* 140. Low Spring Navelwort with a Comfry Leaf.

The 1ſt Sort grows naturally by the Side of Hedges in many Parts of *England*, ſo is ſeldom admitted into Gardens; the Roots are uſed in Medicine, which are gathered by the Herb Folks in the Fields. The Leaves have a ſtrong Odour, like that of Mice in a Trap. It flowers in *June*, and the Seeds ripen in Autumn.

The 2d Sort grows naturally on the *Apennine* Mountains; the Leaves are much larger, the Petal of the Flower is ſhorter, the Plants grow taller than the 1ſt, and come earlier to flower in Spring; this is equally hardy as the common Sort, and where the Seeds are permitted to ſcatter, Plenty of the Plants ariſe without Care.

The 3d Sort grows naturally in *Andaluſia*, I received the Seeds from *Gibraltar*; this hath a tall branching Stalk, garniſhed with oblong woolly Leaves, which embrace the Stalk with their Baſe. The Flowers are produced in looſe Spikes, which come out from the Side of the Stalk, they are from 6 to 8 Inches long, and the Flowers are thinly placed on one Side; theſe are blue, ſtriped with red, and appear in *June*. The Seeds ripen in Autumn, ſoon after which the Root decays.

The 4th Sort grows naturally in *Spain*, and the Iſland of *Crete*; I received this from *Gibraltar*, with thoſe of the former; this riſes with an upright Stalk, little more than a Foot high, garniſhed with long, narrow, ſilvery Leaves, having no Foot Stalks. The Flowers are produced from the Side, and at the Top of the Stalks; they are thinly diſperſed on the Side, but at the Top are in ſmall Cluſters; they are of a deep purple Colour, and much longer than the Empalement; theſe are ſucceeded by 4 broad Buckler-ſhaped Seeds, which are rough. It flowers in *June*, and the Seeds ripen in Autumn, ſoon after which the Roots generally periſh.

The 5th Sort grows naturally in *Virginia*, and the northern Parts of *America*; this riſes with an upright branching Stalk, near 4 Feet high. The Stalks and Leaves are covered with rough Hairs, the Branches ſpread out on every Side, and are but thinly garniſhed with Leaves, from 3 to near 4 Inches in Length, and little more than one Inch broad in the Middle, gradually leſſening to both Ends; they have very ſhort Foot Stalks, placed alternate; the Flowers grow ſcatteringly toward the End of the Branches; theſe are ſmall and white; they appear in *June*, and are ſucceeded by 4 ſmall Seeds, which ripen in Autumn, then the Plants decay.

The 6th Sort grows naturally in *Portugal*, where it was firſt diſtinguiſhed from the 7th by Dr. *Tournefort*. The 7th Sort had been long before cultivated for Ornament, by the Title of *Venus* Navelwort, but of late Years that has been loſt; the 6th Sort is now generally preſerved in the *Engliſh* Gardens, and the Seeds ſold by the Seedſmen under that Title; it is a much larger Plant than the other, ſo makes a finer Appearance. The Leaves of the 6th Sort are broad at their Baſe, and gradually narrowed to the End; they are ſlightly covered with Hairs. The Stalks grow 9 or 10 Inches high, and divide into many Branches, each being terminated by a long looſe Spike of white Flowers, ſtanding on ſeparate Foot Stalks; they are ſucceeded by 4 umbilicated Seeds, from whence it had the Title of Navelwort.

The 7th Sort ſeldom riſes more than 5 or 6 Inches high; the Stalks do not branch near ſo much as thoſe of the 6th; the Leaves are very narrow and long, of a grayiſh Colour, and ſmooth; the Flowers grow in ſhort looſe Panicles at the End of the Branches; theſe are white, but ſmaller than thoſe of the other Sort, and are ſucceeded by Seeds of the ſame Form. This Plant was formerly titled *Linum Umbilicatum*, *i. e.* umbilicated Flax, from the Leaves having ſome Appearance of Flax, and the Seeds having a Hollow like a Navel.

Theſe are both annual Plants, and have been commonly ſown in Gardens, with other low annual Flowers to adorn the Borders of the Flower Garden, but theſe ſhould be ſown in Autumn, for thoſe which are ſown in Spring, often fail, eſpecially in dry Seaſons, and the autumnal Plants always grow much larger, and come to flower earlier in the Year. The Seeds ſhould be ſown where the Plants are deſigned to remain, for they do not bear tranſplanting, unleſs it is performed while they are young. The Plants require no other Culture, but to be thinned where they are too cloſe, and kept clean from Weeds. They flower in *June* and *July*, and the autumnal Plants come a Month earlier; their Seeds ripen in Autumn.

The 8th Sort is a low perennial Plant, which grows naturally in the Woods of *Spain* and *Portugal*, where it uſually flowers about *Chriſtmas*; this hath trailing Branches, which put out Roots from their Joints, whereby it propagates very faſt. The Leaves are Heart-ſhaped, of a bright green Colour, and ſtand on long ſlender Foot Stalks. The Flowers grow in looſe Panicles, which ariſe from the Diviſions of the Stalk; they are ſhaped like thoſe of Borage, but ſmaller, and of a lively blue Colour; they appear in *March* and *April*, and in a cool ſhady Situation continue great Part of *May*, but are rarely ſucceeded by Seeds; the Plants propagate themſelves ſo faſt by their trailing Branches, as to render the Cultivation of them by Seeds unneceſſary. It delights in a moiſt cool Situation.

CYPRIPEDIUM. *Lin. Gen. Plant.* 906. *Calceolus. Tourn. Inſt.* Ladies Slipper, in *French*, *Sabot.*

The *Characters* are,

It hath a ſimple Spadix. The Germen ſits under the Flower, which is covered with a Spatha, or Sheath. The Flowers have 4 or 5 narrow Spear-ſhaped Petals, which expand. The Nectarium, which is ſituated between the Petals, is ſwollen and hollow, in Shape of a Shoe, or Slipper. It hath 2 ſhort Stamina, which ſit upon the Pointal, terminated by erect Summits, which join to the upper Lip of the Nectarium; below the Flower, is fixed a ſlender contorted Germen, ſupporting a ſhort Style, adhering to the upper Lip of the Nectarium, crowned by an obſolete Stigma. The Germen becomes an oval blunt Capſule with 3 Corners, having 3 Furrows, 3 Valves, and one Cell, filled with ſmall Seeds.

The *Species* are,

1. CYPRIPEDIUM *radicibus fibroſis, foliis ovato-lanceolatis caulinis. Act. Upſal.* 1740. Ladies Slipper with fibrous Roots, and the Leaves on the Stalks oval and Spear-ſhaped. This is the *Calceolus Mariæ. Ger.* 359.

2. CYPRIPEDIUM *ſcapo unifloro, foliis oblongis glabris, petalis anguſtis acuminatis.* Ladies Slipper with one Flower in a Sheath, oblong ſmooth Leaves, and very narrow pointed Petals. This is the *Calceolus Mariæ luteus. Mor. H. R. Bloſ.* Yellow Ladies Slipper.

3. CYPRIPEDIUM *foliis oblongo-ovatis venoſis hirſutis, flore maximo.* Ladies Slipper with oblong, oval, veined Leaves, which are hairy, and a very large Flower. *Calceolus flore majore.* Ladies Slipper with a larger Flower.

The 1ſt Sort grows naturally in ſome ſhady Woods in the North of *England*. I found it in the Park of *Borough Hall*, in *Lancaſhire*, the Seat of the late *Robert Fenwick*, Eſq. It hath a Root compoſed of many fleſhy Fibres, from which ariſe, in Spring, 2, 3, or more Stalks, in Proportion to the Strength of the Root; theſe grow 9 or 10 Inches high, and are garniſhed with oval Spear-ſhaped Leaves, having a few longitudinal Veins; in the Boſom of one of the upper Leaves, is incloſed the Flower Bud, which is ſupported by a ſlender Foot Stalk, which generally turns a little on one Side. The Flower hath 4, dark, purple Petals, placed in form of a Croſs, which ſpread wide open. In the Center is ſituated the large hollow Nectarium, almoſt as large as a Bird's Egg, ſhaped like a wooden Shoe, of a pale yellowiſh Colour, with a few brown Streaks; the Opening is covered with two Ears, the upper one is tender, white, and ſpotted with purple; the lower is thick, and of an herbaceous Colour. The Flowers appear about the End of *May*, and the Stalks decay early in Autumn.

The 2d Sort grows naturally in *Virginia*, and other Parts of *North America*; this hath longer and ſmoother Leaves than the former. The two Side Petals of the Flower are long, narrow, and terminate in acute Points, being wreathed, or undulated on their Sides. The Nectarium is oblong, and narrower than in the firſt Sort, and is yellow, ſpotted with browniſh red. The Stalks riſe near a Foot and a Half high.

The 3d Sort grows naturally in *America*, where the Inhabitants call it *Moccaſin* Flower; this riſes a Foot and a Half high. The Leaves are of an oblong oval Form, and deeply veined. The Flower is large, of a rediſh brown Colour, marked with a few purple Veins. This Sort flowers at the End of *May*.

All theſe Sorts are with Difficulty preſerved in Gardens; they muſt be planted in a loamy Soil, and in a Situation where they may have the Morning Sun only. They muſt be procured from the Places where they naturally grow; the Roots ſhould be ſeldom removed, for tranſplanting prevents their flowering.

CYSTICAPNOS. *See* Fumaria.

CYTISO GENISTA. *See* Spartium.

CYTISUS. *Lin. Gen. Plant.* 785. *Tourn. Inſt. R. H.* 647. Baſe Tree Trefoil, in *French*, *Citiſe*.

The *Characters* are,

It hath a Butterfly Flower, with a ſhort Bell-ſhaped Empalement of one Leaf, divided in 2 Lips, the upper being bifid and acute, the under indented in 3 Parts. The Standard of the Flower is riſing, oval, and reflexed on the Sides. The Wings are obtuſe, erect, and the Length of the Standard. The Keel is bellied and acute. It hath 10 Stamia, 9 joined, and one ſtanding ſeparate, terminated by riſing Summits. It hath an oblong Germen, ſupporting a ſingle Style, crowned by an obtuſe Stigma. The Germen becomes an oblong blunt Pod, narrow at the Baſe, filled with Kidney-ſhaped flated Seed.

The *Species* are,

1. Cytisus *foliis oblongo-ovatis, racemis brevioribus pendulis, caule arboreo.* *Cytiſus* with oblong oval Leaves, ſhort Spikes of Flowers hanging downward, and a Tree-like Stalk. This is the *Cytiſus Alpinus latifolius, flore racemoſo pendulo. Tourn. Inſt. R. H.* 648. Broad leaved *Cytiſus* of the *Alps*, with pendulous Bunches of Flowers, commonly called *Laburnum*.

2. Cytisus *foliis ovato-lanceolatis, racemis longioribus pendulis, caule fruticoſo.* *Cytiſus* with oval Spear-ſhaped Leaves, long pendulous Bunches of Flowers, and a ſhrubby Stalk. This is the *Cytiſus Alpinus anguſtifolius, flore racemoſo pendulo longiore. Tourn.* Narrow leaved *Cytiſus* of the *Alps*, with longer pendulous Bunches of Flowers, commonly called long ſpiked *Laburnum*.

3. Cytisus *racemis ſimplicibus erectis, foliolis ovato-oblongis. Hort. Cliff.* *Cytiſus* with ſingle erect Bunches of Flowers, and oval oblong Leaves. This is the *Cytiſus glaber nigricans. C. B.* Blackiſh ſmooth *Cytiſus*.

4. Cytisus *villoſus, foliolis cuneiformibus perennantibus, caulibus ramoſiſſimis.* Hairy *Cytiſus* with Wedge-ſhaped ſmall Leaves, which are perennial, and very branching Stalks. This is the *Cytiſus Canarienſis, ſempervirens & incanus. Hort. Amſt.* 2. 103. Evergreen hoary *Cytiſus* of the *Canary* Iſlands.

5. Cytisus *racemis erectis, calycibus bracteâ triplici auctis, foliis floralibus ſeſſilibus. Lin. Sp. Plant.* 739. *Cytiſus* with erect Bunches of Flowers, 3 Laminæ under the Empalement, and the Leaves on the Flower Branches ſitting cloſe. This is the *Cytiſus glabris, foliis ſubrotundis, pediculis breviſſimis. C. B. P.* 390. Smooth *Cytiſus* with roundiſh Leaves, and very ſhort Foot Stalks, commonly called by Gardeners, *Cytiſus ſecundus Cluſii.*

6. Cytisus *hirſutus, foliolis ovatis, floribus lateralibus, caule erecto fruticoſo.* Hairy *Cytiſus* with ſmall oval Leaves, Flowers proceeding from the Sides of the Branches, and an upright ſhrubby Stalk. This is the *Cytiſus hirſutus. J. B.* 1. 372. Hairy *Cytiſus*, commonly called Evergreen *Cytiſus* of *Naples.*

7. Cytisus *floribus ſubſeſſilibus, foliis tomentoſis, caulibus herbaceis. Lin. Sp. Pl.* 740. *Cytiſus* with Flowers ſitting cloſe to the Branches, woolly Leaves, and an herbaceous Stalk. *Cytiſus humilis argenteus anguſtifolius. Tourn.* Low ſilvery *Cytiſus* having narrow Leaves.

8. Cytisus *floribus capitatis, ramis decumbentibus. Prod. Leyd.* 376. *Cytiſus* with Flowers collected in Heads, and Branches lying on the Ground. This is the *Cytiſus ſupinus foliis infra & ſiliquis molli lanugine pubeſcentibus. C. B. P.* 390. Low *Cytiſus* with the under Side of the Leaves, and Pods covered with a ſoft Down.

9. Cytisus *Monſpeſulanus, medicæ folio, ſiliquis denſè congeſtis & villoſis. Tourn. Inſt.* 648. *Cytiſus* of *Montpelier* with a medick Leaf, and hairy Pods collected in thick Bunches.

10. Cytisus *ramis humifuſis albidis, floribus capitatis terminalibus, foliolis ovalibus glabris aggeſtis. Sauv. Monſp.* *Cytiſus* with proſtrate Branches, which are white; Flowers collected in Heads, terminating the Branches, and ſmall, oval, ſmooth Leaves growing in Cluſters. This is the *Cytiſus foliis incanis anguſtis quaſi complicatis.* Hoary narrow leaved *Cytiſus* with complicated Leaves.

11. Cytisus *caule erecto fruticoſo, ramoſo foliolis ovatis glabris, floribus capitatis terminalibus.* *Cytiſus* with a ſhrubby erect branching Stalk, oval, ſmooth Leaves, and Flowers collected in Heads terminating the Branches. The *Siberian Cytiſus.*

12. Cytisus *floribus capitatis, foliolis ovato-oblongis, caule fruticoſo.* *Cytiſus* with Flowers collected in Heads, oblong oval Leaves, and a ſhrubby Stalk, commonly called *Tartarian Cytiſus.*

13. Cytisus *caule erecto fruticoſo, foliolis cuneiformibus emarginatis, floribus ſimplicibus alaribus.* *Cytiſus* with a ſhrubby erect Stalk, Wedge-ſhaped Leaves, which are indented, and ſingle Flowers growing on the Sides of the Branches.

14. Cytisus *foliis lanceolato-linearibus tomentoſis, floribus ſpicatis alaribus pedunculis longiſſimis.* *Cytiſus* with narrow Spear-ſhaped woolly Leaves, Flowers growing in Spikes from the Sides of the Branches, and very long Foot Stalks. This is the *Cytiſus Africanus hirſutus, anguſtifolius. Olden.* Hairy narrow leaved *African Cytiſus.*

15. Cytisus *racemis lateralibus ſtrictis, ramis angulatis, foliolis cuneiformibus. Lin. Sp. Plant.* 740. *Cytiſus* with lateral Bunches of Flowers, angular Branches, and Wedge-ſhaped ſmall Leaves. This is the *Cytiſus Æthiopicus, ſubrotundis incanis minoribus foliis, floribus parvis luteis. Pluk. Alm.* 128. *Ethiopian Cytiſus* with ſmaller, roundiſh, hoary Leaves, and a ſmall yellow Flower.

16. Cytisus *racemis axillaribus erectis, foliolis ſublanceolatis tomentoſis, intermedio longiùs petiolato. Flor. Zeyl.* *Cytiſus* with erect Spikes of Flowers proceeding from the Sides of the Branches, and woolly Spear-ſhaped Leaves, the Foot Stalk of the middle one being the longeſt. This is the *Cytiſus arboreſcens, fructu eduli albo. Plum.*

Plum. Cat. 19. Tree *Cytiſus* with white eatable Fruit, commonly called Pigeon Pea in *America.*

The 1ſt Sort is the common broad leaved *Laburnum*, which was formerly in greater Plenty in the *Engliſh* Gardens than at preſent; for ſince the 2d Sort hath been introduced, it has almoſt turned this out; the Spikes of Flowers being much longer, they make a finer Appearance when they are in flower, which has occaſioned their being more generally cultivated; but the 1ſt grows to be the largeſt Tree, and the Wood of it is very hard, of a fine Colour, and will poliſh very well; it approaches near to green Ebony, ſo is by the *French*, titled, Ebony of the *Alps*, and is there uſed for many Kinds of Furniture; but in *England* there are few of theſe Trees which have been ſuffered to ſtand long enough to arrive to any conſiderable Size; for as they have been only conſidered as an ornamental Tree, the frequent Alterations which moſt of the Gardens in *England* have undergone, have occaſioned their being rooted out; but in ſome of the old Gardens in *Scotland*, where they have been permitted to ſtand, there are large Trees of this Kind, which are fit to cut down for the uſe of the Timber. I have ſeen two old Trees of it in Gardens, which were more than a Yard in girt, at 6 Feet from the Ground, and theſe had been broken and abuſed, otherwiſe might have been much larger. They grow very faſt, and are extremely hardy, ſo may be well worth propagating upon poor ſhallow Soils, and in expoſed Situations. His Grace the Duke of *Queenſberry* ſowed a great Quantity of the Seeds of this Tree, upon the Side of the Downs, at his Seat near *Ameſbury*, in *Wiltſhire*, where the Situation was very much expoſed, and the Soil ſo ſhallow, that few Trees would grow there, yet in this Place the young Trees were 12 Feet high in 4 Years Growth, ſo became a Shelter to the other Plantations, for which they were deſigned; but the Hares and Rabbits are great Enemies to theſe Trees, by barking them in Winter, ſo that where they are cultivated, they ſhould be fenced from theſe Animals

Both theſe Sorts are eaſily propagated by Seeds, which the Trees produce in Plenty; if theſe are ſown upon a common Bed of Earth in *March*, the Plants will appear by the Middle or End of *April*, and require no Care but to be kept clean from Weeds during the following Summer; if the Plants are too cloſe together, they may be tranſplanted the Autumn following, either into a Nurſery for a Year or two to get Strength, or into the Places where they are deſigned to remain; where People would cultivate them for their Wood, it will be the beſt Way to ſow the Seeds upon the Spot where they are intended to grow, becauſe theſe Trees ſend out long thick fleſhy Roots to a great Diſtance, which will penetrate Gravel or Rocks, and if theſe Roots are cut or broken, it greatly retards their Growth; therefore when they are not ſown upon the intended Spot, they ſhould be tranſplanted thither young, otherwiſe they will not grow to near the Size; though where they are only deſigned for Ornament, the removing the Plants twice will ſtop their Growth, and cauſe them to be more productive of Flowers; but all Trees intended for Timber, are much better ſown on the Ground, than if they are tranſplanted.

If the Seeds of theſe Trees are permitted to ſcatter in Winter, the Plants will riſe in great Plenty the following Spring, ſo that a few Trees will ſoon ſupply any Perſon with a ſufficient Number of Plants.

Theſe Trees flower in *May*, and make a fine Appearance, their Branches being loaded with long Strings of yellow Flowers, which hang down from every Part The Seeds grow in long Pods and ripen in Autumn. There is a Variety of both theſe Trees with variegated Leaves, which ſome are fond of cultivating; this is only done by Cuttings or Layers, for the Seeds of theſe will produce Plants with green Leaves; the Cuttings ſhould be planted in Autumn, when the Leaves begin to fall, and the Plants muſt have a poor Soil, for in good Ground they are apt to become plain.

If the 1ſt Sort is conſidered as a uſeful Wood which there is no Reaſon to doubt, it may be planted in large Clumps in Parks, and will be very ornamental there; I am certain, from long Experience, that this Tree, will thrive upon many Soils, and in ſuch Situations as few other Trees will make any Progreſs; the Objection to fencing is the ſame here, as for any other Trees, for no Plantation, if not well ſecured from Animals, will anſwer the Deſign of the Planter.

The 2d Sort differs from the 1ſt, in having narrower Leaves, longer Bunches of Flowers, and the Trees do not grow ſo large and ſtrong, this Difference I find is conſtant from Seed. There is another Sort mentioned by *Tournefort*, with ſhorter Bunches of Flowers, one Tree of which Kind I thought I had found in a Garden; the Bunches of the Flowers upon this Tree were cloſe and almoſt round; but I ſowed the Seeds of it, and the Plants proved to be only the common Sort.

The 3d Sort grows naturally in *Auſtria*, *Italy* and *Spain*, and at preſent is rare in the *Engliſh* Gardens; it was formerly in ſome curious Gardens here, but had been long loſt, till a few Years ago, when I procured the Seeds from Abroad, which ſucceeded in the *Chelſea* Garden, where the Plants have flowered and produced ripe Seeds, which have been communicated to the curious.

This Shrub ſeldom riſes more than 3 or 4 Feet high in *England*; it naturally puts out many lateral Branches near the Ground, which ſpread out on every Side, ſo as to form a low ſhrubby Buſh, ſo is with Difficulty raiſed to a Stem: The Branches are very ſlender, and their Ends are frequently killed if the Winter is ſevere; theſe are garniſhed with oblong, oval Leaves, growing by Threes on each Foot Stalk; they are equal in Size, and of a dark green Colour; the Branches grow erect, and are terminated by Spikes of yellow Flowers, about 4 or 5 Inches in Length, ſtanding upright, and as all the Branches are thus terminated, ſo when the Shrubs are in flower, they make a fine Appearance; it flowers in *July*, after moſt of the other Sorts are paſt, and the Seeds ripen in Autumn. This is propagated by Seeds, which ſhould be ſown on a Bed of light Earth in *March*, covering them about one 3d of an Inch with fine ſcreened Mould; in the Beginning of *May* the Plants will appear, when they muſt be carefully weeded, and during the following Summer conſtantly kept clean, which is all the Culture they require till Autumn, when it will be very proper to arch the Bed over with Hoops, that in froſty Weather, the Plants may be covered with Mats, to prevent their tender Shoots from being killed; for as theſe young Plants are apt to continue growing later in the Autumn, than thoſe which are become woody, they are much more ſuſceptible of Cold, therefore where there is not ſome Care taken to cover them, if the Winter ſhould prove ſevere, many of them may be entirely deſtroyed, and the others killed to the Ground. The Spring following, after the Danger of hard Froſt is over, the Plants ſhould be carefully taken up, and planted out at the Diſtance of one Foot, Row from Row, and ſix Inches aſunder in the Rows, this ſhould be in a ſheltered Situation, and as theſe Plants do not ſhoot till late in the Spring, they need not be tranſplanted before the End of *March*, or Beginning of *April*, and if the Seaſon ſhould then prove warm and dry, it will be proper to give the Plants ſome Water to ſettle the Earth to their Roots, and if the Drought continue, and the Waterings are 3 times repeated at a Week's Interval from each, it will be of Service to the Plants. After they have taken new Root, they require no farther Care, but to keep them conſtantly clean from Weeds, in this Nurſery the Plants may remain two Years, in which Time they will have acquired Strength enough to be tranſplanted where they are to remain.

This Shrub is exhibited in my Figures of Plants, No. 117.

The 4th Sort grows naturally in the *Canary* Iſlands, from whence the Seeds were firſt brought to *England*; this being a Native of warm Countries, is too tender to live through the Winter in the open Air here, but requires only the Shelter of a Green-houſe, and will thrive where Myrtles and *Amomum Plinii* do well. This is a very buſhy Shrub, which riſes with tough pliable Stalks to the Height of 8 or 10 Feet, ſending out many ſlender hairy Branches, very cloſely garniſhed with ſmall Wedge-ſhaped Leaves, placed by three on each Foot Stalk, theſe are of a dark green and very hairy; the Branches are terminated by cloſe ſhort Bunches of bright yellow Flowers, theſe come out in *May*, and are frequently ſucceeded by ſhort hairy Seed Pods, which ripen in *Auguſt*.

It is propagated by Seeds, which ſhould be ſown upon a very temperate hot Bed in *March*, which will bring up the Plants in a ſhort Time; in 3 Weeks after they may be tranſplanted, each into a ſmall Halfpenny Pot, filled with light Earth, and plunged into a moderate hot Bed, juſt to forward their taking freſh Root; then they ſhould be inured gradually to the open Air, and the Middle or latter End of *May*, placed abroad in a ſheltered Situation, and afterward treated in the ſame Way, as other hardy Kinds of Green-houſe Plants.

The 5th Sort grows naturally in the South of *France*, *Spain*, and *Italy*, but has been long cultivated in the Nurſery Gardens, as an ornamental flowering Shrub by the Title of *Cytiſus ſecundus Cluſii*, which is a great Miſtake, for the 10th Species here enumerated, is the 2d of *Cluſius*. This riſes with a woody Stalk, putting out many Branches which are covered with a browniſh Bark, and garniſhed by obverſe oval ſmall Leaves growing by Threes on very ſhort Foot Stalks. The Flowers are produced in cloſe ſhort Spikes at the End of the Branches, they are of a bright yellow and appear in *June*, theſe are ſucceeded by ſhort broad Pods, which contain one Row of Kidney-ſhaped Seeds, which ripen in *Auguſt*. Theſe Shrubs will riſe to the Height of 7 or 8 Feet, and become very buſhy, they are very hardy, ſo will thrive in any Situation, and on almoſt any Soil, which is not too wet. They are propagated by Seeds, which may be ſown on a common Bed of light Earth in Spring, and kept clean from Weeds the following Summer; in Autumn the Plants may be tranſplanted into a Nurſery in Rows, one Foot apart, and at 6 Inches Diſtance in the Rows, where they may remain two Years to acquire Strength, and ſhould then be removed to the Places where they are deſigned to grow.

The 6th Sort hath a ſoft ſhrubby Stalk, dividing into many Branches, which grow erect, and freqently riſe to the Height of 8 or 10 Feet; the Stalks and Leaves are very hairy, the Leaves are oval, growing 3 upon each Foot Stalk, and are placed cloſely on the Branches; the Flowers come out from the Side of the Stalk, in ſhort Bunches; they are of a pale yellow, appear in *June*, and ſucceeded by long narrow, hairy Pods, with one Row of Kidney-ſhaped Seeds, which ripen in *September*.

This Sort, of late Years, has been much cultivated in the Nurſery Gardens near *London*, by the Title of evergreen *Cytiſus* of *Naples*; but in ſevere Froſt theſe Shrubs are killed, ſo they are not proper for every Situation, therefore ſhould only be planted on a dry Soil, and in warm Situations; they are alſo very difficult to remove when grown to any Size, for they ſhoot long Roots deep into the Ground, and when theſe are broken, the Plants ſeldom ſurvive. This may be propagated as hath been directed for the 3d Sort. It grows naturally in the South of *France*, in *Spain* and *Italy*.

The 7th Sort grows naturally in the South of *France*, and in *Italy*; I received it from *Verona*, near which it grows in Plenty. This is a low perennial Plant, and puts out ſeveral weak Stalks from the Root, which ſpread on the Ground, and are from 6 to 8 Inches long, garniſhed with ſmall ſilvery Leaves growing by Threes; The Flowers are produced at the End of the Stalks, two or three growing together upon ſhort Foot Stalks; they are of a pale yellow, and appear in *July*; but unleſs the Seaſon proves very warm, they do not produce Seeds in *England*. It is propagated by Seeds ſown in Spring in a warm Border, where the Plants are to remain; for as they have commonly one downright Root, they ſeldom live if tranſplanted. The Plants require no Culture but to keep them clean from Weeds; they flower the ſecond Year.

The 8th Sort grows naturally in *Sicily*, *Italy*, and *Spain*; this is a perennial Plant, from whoſe downright Root, proceed ſeveral weak Branches, which trail on the Ground, and extend to the Length of 8 or 10 Inches; theſe are garniſhed with oblong Leaves, placed by Threes upon pretty long Foot Stalks; they are hoary on their under Side, but ſmooth above; the Flowers are collected in Heads, at the End of the Stalks, having a Cluſter of Leaves under them; they are of a deep yellow Colour, and appear the latter End of *June* in warm Seaſons; theſe are ſucceeded by flat woolly Pods, containing one Row of ſmall Kidney-ſhaped Seeds, which ripen in *September*. This Plant is propagated by Seeds, which ſhould be ſown where they are to remain, and treated as the 7th Sort.

The 9th Sort grows naturally about *Montpelier*; this riſes with an upright Stalk 4 or 5 Feet high, ſending out many Side Branches, which are ſtreaked or furrowed; theſe are garniſhed with oval hairy Leaves; the Flowers are produced on the Side of the Stalks, of a bright yellow; they appear in *June*, and are ſucceeded by hairy Pods, which ripen in *September*. This may be propagated in the ſame Manner as the 3d Sort.

The 10th Sort grows naturally about *Montpelier*; this is a perennial Plant, with a ſtrong downright Root, ſending out many tough ligneous Branches, which ſpread flat on the Ground, and extend to a Foot and a Half in Length, having a white Bark, dividing into many ſmaller; theſe are garniſhed by very ſmall Trefoil Leaves ſitting cloſe to the Branches, the Flowers are produced at the Extremity of the Branches, 3 or 4 together; they are but ſmall, and of a deep yellow inclining to an Orange Colour. Theſe appear in *July*, and in very warm Seaſons, are ſucceeded by ſhort Pods, containing 3 or 4 Kidney-ſhaped Seeds in each. This Sort is propagated as the 7th.

The 11th Sort came originally from *Siberia*; this is a low Shrub, which ſeldom riſes more than 3 Feet high in *England*, ſending out many Side Branches, garniſhed by oval ſmooth Leaves, having pretty long Foot Stalks; the Flowers are produced in Cluſters or Heads at the End of the Branches; theſe are of a bright yellow, and appear the End of *March*, or Beginning of *April*, but are ſeldom ſucceeded by Pods in *England*. This is propagated by Seeds as the other Sorts, but requires a cool Situation; for the Plants are ſubject to ſhoot upon the firſt mild Weather in *February*, and ſo are often cut down by the Froſts in *March*, which ſometimes kills the Shoots down to the old Wood.

The 12th Sort grows naturally in *Tartary*, and the Seeds were ſent to the Imperial Garden at *Peterſburgh*, from whence many of the curious Gardens in *Europe* have been furniſhed with them. This hath a Shrubby Stalk, which riſes near 4 Feet high, dividing into many Branches with a green Bark, cloſely garniſhed by oblong oval ſmooth Leaves, of a hoary green Colour; the Flowers are produced in cloſe Heads at the End of the Branches, having a Cluſter of Leaves under them, they are of a bright yellow Colour, and appear in *May*; theſe are ſometimes ſucceeded by ſhort woolly Pods, containing 3 or 4 ſmall Kidney-ſhaped Seeds in each. This is propagated by Seeds, which ſhould be ſown early in Spring, on a Border of ſtrong Ground expoſed to the Eaſt; for if they are ſown where they have full Sun, the Plants will not thrive. This requires a cold Situation and a pretty ſtrong Soil, otherwiſe it will not thrive.

The 13th Sort grows naturally about *Algiers*, from whence the Rev. Dr. *Shaw* brought the Seeds, which ſucceeded in the *Chelſea* Garden. This riſes with a ſoft ſhrubby Stalk to the Height of 8 or 10 Feet, putting out many ſlender Branches on every Side; theſe are garniſhed with ſmall Wedge-ſhaped Leaves, which are indented at the Top, of a dark green and ſmooth; the Flowers come out ſingle from the Side of the Branches, theſe are large and of a bright yellow; they appear in *June*, and are ſometimes ſucceeded by Pods containing 3 or 4 Kidney-ſhaped Seeds, which ripen in Autumn. This Sort is too tender to live in the open Air through the Winter in *England*, therefore the Plants muſt be treated the ſame Way as the 4th Sort, and it is propagated by Seeds in the ſame Manner.

The 14th Sort grows naturally in *Africa*; this riſes with weak Stalks about 5 Feet high, which ſend out a few Side Branches which grow erect, and are thinly garniſhed by narrow Spear-ſhaped Trefoil Leaves, woolly, and ſtanding on long Foot Stalks; the Flowers grow in cloſe Spikes, on long naked Foot Stalks, which ariſe from the Wings of the Leaves; they are ſmall, of a deep yellow, and appear in *July*, but do not produce Seeds here. This requires the ſame Treatment as the former.

The 15th Sort grows naturally at the *Cape of Good Hope*; this riſes with a weak ſhrubby Stalk near 6 Feet high, ſending out weak angular Branches, like the common Broom; theſe are garniſhed by Wedge-ſhaped ſmall Leaves growing by Threes. The Flowers come out in ſmall ſlender Bunches from the Side of the Stalks, they are ſmall, and of a pale yellow Colour. They appear in *June* and *July*, but are rarely ſucceeded by Pods here. This muſt be propagated and treated as the 4th Sort.

The 16th Sort grows naturally in the Iſlands of *America*; this riſes with a ſhrubby Stalk 8 or 10 Feet high, ſending out many Side Branches, garniſhed by Spear-ſhaped woolly Leaves, placed by Threes on each Pedicle; that in the Middle having a diſtinct Foot Stalk, the 2 Side Lobes growing cloſe to the principal Foot Stalk. The Flowers come out from the Side of the Branches, ſometimes ſingle, at other Times in Cluſters; they are of a deep yellow Colour, and about the Size of thoſe of the common *Laburnum*; theſe are ſucceeded by hairy Pods about 3 Inches long, which are Sickle-ſhaped, ending with a long acute Point; theſe ſwell at the Place where each Seed is lodged, the Seeds are roundiſh, a little inclined to a Kidney Shape. Theſe Seeds are eſteemed an excellent Food for Pigeons in *America*, from whence it had the Title of Pigeon Pea.

This Plant grows only in very warm Countries, ſo cannot be preſerved in *England*, unleſs placed in a warm Stove. It riſes eaſily from Seeds in a hot Bed, and will grow 3 or 4 Feet high the firſt Year, provided they have a proper Heat, and the 2d Year they will produce Flowers and Seeds. The Plants muſt be placed in the Bark Bed in the Stove, and treated as other tender Plants from the ſame Countries: They ſhould have but little Water in Winter, and in Summer a large Share of free Air admitted to them in warm Weather.

D.

DAFFODIL. *See* Narciſſus.

DAISIES. *See* Bellis.

DALECHAMPIA. *Lin. Gen. Pl.* 1022. *Plum. N. G.* So named by Father *Plumier*, in Honour of *Jacobus Dalechamp*, a curious Botaniſt.

The *Characters* are,

It hath male and female Flowers on the ſame Plant; the Flowers have a double Involucrum, compoſed of ſeveral narrow Leaves armed with ſtinging Hairs; the male Flowers have a rough Empalement of one Leaf, which is coloured; they have no Petals, but many Stamina which ariſe at different Times, terminated by Twin Summits. The female Flowers have a roundiſh three-cornered Germen ſupporting one erect Style, divided into a Fork at the Top, in the Middle of which is ſituated the Stigma. The Germen becomes a round three cornered Capſule, which is ſmooth, having 3 Cells, each containing one roundiſh Seed.

We have but one *Species* of this in *England*, *viz.*

DALECHAMPIA *foliis trilobis glabris, floribus axillaribus caule volubili.* *Dalechampia* with ſmooth trifoliate Leaves, Flowers growing from the Sides of the Branches, and a twining Stalk. This is the *Dalechampia ſcandens, lupuli foliis, fructu tricocco glabro, calyce hiſpido. Houſt. Mſſ.* Climbing *Dalechampia* with Hop Leaves, a three ſeeded ſmooth Fruit, and a rough Empalement.

This Plant grows naturally in *Jamaica*, from whence Dr. *Houſton* ſent me the Seeds, which ſucceeded in the *Chelſea* Garden, where the Plants have flowered and perfected Seeds. This muſt be a different Plant from that which *Plumier* found growing in *Martinico*, or he has taken the Involucrum for the Seed Veſſel by his Title of it, for he calls it *fructu tricocco hiſpido*; whereas this hath a ſmooth Fruit with a hiſpid Empalement.

It hath a Root compoſed of many Fibres, which extend to a great Diſtance, from which ariſe ſeveral weak twining Stalks, which faſten themſelves to the neighbouring Plants, and mount up to a conſiderable Height; theſe are garniſhed at each Joint by one trifoliate Leaf, or more properly by a Leaf divided into 3 Lobes, for theſe are joined together at their Baſe; they are ſmooth, the 2 Side Lobes are oblique to the Mid-rib, but the middle one is equal. The Flowers are produced from the Side of the Stalks, 3 or 4 growing on each Foot Stalk; ſome of theſe are male, and others female; they are of an herbaceous Colour, and ſmall, ſo make no Appearance; they have each a double Involucrum, made up of 2 Orders of Leaves, which are narrow, and armed with ſmall briſtly Hairs, which ſting the Hands of thoſe who unwarily touch them; the Flowers are ſucceeded by roundiſh Capſules, having 3 prominent Lobes which are ſmooth, each incloſing a ſingle Seed.

This Plant is propagated by Seeds, which muſt be ſown early in Spring on a hot Bed; when the Plants are 3 Inches high, they ſhould be carefully tranſplanted, each into a ſmall Pot filled with light rich Earth, and then plunged into a hot Bed of Tanners Bark, being careful to ſcreen them from the Sun, until they have taken new Root; after which Time the Glaſſes of the hot Bed ſhould be raiſed every Day, in Proportion to the Heat of the Weather, to admit freſh Air to the Plants; they muſt alſo be frequently watered, for they naturally grow in moiſt Places. When they have grown ſo large as to fill theſe Pots with their Roots, they ſhould be removed into larger Pots, and placed in the Bark Bed in the Stove; where they muſt be ſupported either with Stakes, or a Trellis, round which they will twine, and riſe to the Height of 8 or 10 Feet.

Theſe Plants muſt be kept conſtantly in the Stove, for they are too tender to bear the open Air here, even in the Summer Seaſon; therefore they ſhould be placed with Convolvuluſes, and other twining Plants, near the Back of the Stove, where ſhould be made an Eſpalier to ſupport them; in which Situation they will thrive, and produce Flowers, and ſometimes perfect Seeds in this Country; but, in order to this, they ſhould have a large Share of freſh Air in warm Weather, by drawing down the upper Glaſſes of the Stove; in Winter the Stove ſhould be kept to a temperate Heat, or rather higher. In Summer they will require a large Share of Water, but in Winter it ſhould be given to them in leſs Quantities, but muſt be frequently repeated. Theſe Plants do not continue above 2 or 3 Years, ſo young Plants ſhould be raiſed to preſerve the Kind.

DAMASONIUM, Star-headed Water Plantain.

The *Characters* are,

It hath a Flower compoſed of 3 Leaves, which are placed orbicularly, and expand in Form of a Roſe: Out of the Flower Cup riſes the Pointal, which afterward becomes a Star-ſhaped Fruit, with many Cells, full of oblong Seeds.

The *Species* are,

1. DAMASONIUM *ſtellatum. Lugd.* Star-headed Water Plantain.

2. DAMASONIUM *Americanum maximum, plantaginis folio, flore flaveſcente, fructu globoſo. Plum.* Greateſt *American* Water Plantain, with a Plantain Leaf, a yellowiſh Flower, and a globular Fruit.

The firſt of theſe Plants is a Native of *England*; it grows commonly in ſtanding Waters, which are not very deep. It is ſometimes uſed in Medicine, but never cultivated in Gardens, ſo muſt be gathered for Uſe in the Places of its Growth.

The 2d Sort grows in *Jamaica*, *Barbadoes*, and the warm Parts of *America*, where it is generally found in ſtagnating Waters, and ſwampy Places; ſo that it would be difficult to preſerve it in *England*, for it will not live in the open Air, and requires a Bog to make it thrive; but as it is a Plant of no great Beauty or Uſe, it is not worth cultivating in this Country.

DANDELION. *See* Leontodon.

DAPHNE. *Lin. Gen. Pl.* 436. *Thymelæa. Tourn. Inſt.* Spurge Laurel, or Mezereon, in *French Garou.*

The *Characters* are,

The Flower hath no Empalement, it is cylindrical, of one Petal, cut into 4 Parts at the Top, where it ſpreads open; it hath 8 ſhort Stamina inſerted in the Tube, which are alternately lower, terminated by erect bilocular Summits. The oval Germen ſituated at the Bottom of the Tube, is crowned by a headed depreſſed Stigma; the Germen becomes a roundiſh Berry with one Cell, incloſing one roundiſh fleſhy Seed.

The *Species* are,

1. DAPHNE *racemis axillaribus, foliis lanceolatis glabris. Lin. Sp. Plant.* 357. *Daphne* with Bunches of Flowers proceeding from the Sides of the Branches, and ſmooth Spear-ſhaped Leaves. This is the *Thymelæa lauri folio ſempervirens, ſeu laureola mas. Tourn. Inſt.* 595. *Thymelæa* with an ever-green Bay Leaf, or male *Laureola*, commonly called Spurge Laurel.

2. DAPHNE *floribus ſeſſilibus ternis caulinis, foliis lanceolatis deciduis. Lin. Sp. Plant.* 357. *Daphne* with three Flowers together ſitting cloſe to the Stalk, and Spear-ſhaped Leaves, which fall off in Autumn. This is the

Thymelæa lauri folio deciduo, ſive laureola fœmina. Tourn. Inſt. 595. *Thymelæa* with a deciduous Bay Leaf, or female *Laureola*, commonly called Mezereon.

3. DAPHNE *floribus ſeſſilibus axillaribus, foliis lanceolatis, caulibus ſimpliciſſimis. Lin. Sp. Plant.* 356. *Daphne* with Flowers ſitting cloſe to the Sides of the Branches, Spear-ſhaped Leaves, and ſingle Stalks. This is the *Thymelæa foliis polygalæ glabris. C. B. P.* 463. *Thymelæa* with ſmooth Milkwort Leaves.

4. DAPHNE *floribus ſeſſilibus aggregatis axillaribus, foliis ovatis utrinque pubeſcentibus nervoſis. Lin. Sp. Plant.* 356. *Daphne* with Flowers in Cluſters ſitting cloſe to the Sides of the Branches, and oval nervous Leaves covered with ſilky Hairs on both Sides. This is the *Thymelæa foliis candicantibus ſerici inſtar mollibus. C. B. P.* 463. *Thymelæa* with ſoft white Silk-like Leaves, commonly called *Tarton-raire*.

5. DAPHNE *floribus ſeſſilibus aggregatis lateralibus, foliis lanceolatis obtuſiuſculis ſubtus tomentoſis. Lin. Sp. Plant.* 356. *Daphne* with Cluſters of Flowers growing cloſe to the Sides of the Branches, and Spear-ſhaped blunt Leaves woolly on their under Side. This is the *Chamelæa Alpina, folio infernè incano. C. B. P.* 462. *Alpine Chamelæa* with Leaves hoary on their under Side.

6. DAPHNE *floribus congeſtis terminalibus ſeſſilibus, foliis lanceolatis nudis. Lin. Sp. Plant.* 357. *Daphne* with Cluſters of Flowers ſitting cloſe on the Tops of the Branches, and naked Spear-ſhaped Leaves. This is the *Cneorum. Matth. Hiſt.* 46.

7. DAPHNE *paniculâ terminali, foliis lineari-lanceolatis acuminatis. Lin. Sp. Plant.* 357. *Daphne* with a Panicle of Flowers terminating the Branches, and narrow Spear-ſhaped pointed Leaves. This is the *Thymelæa foliis lini. C. B. P.* 463. *Thymelæa* with Flax Leaves.

8. DAPHNE *floribus terminalibus pedunculatis, foliis ſparſis linearibus patentibus mucronatis. Lin. Sp. Plant.* 358. *Daphne* with Flowers terminating the Branches, having Foot Stalks and narrow ſpreading acute pointed Leaves, placed ſcatteringly on the Branches. This is the *Thymelæa capitata lanuginoſa, foliis creberrimis minimis aculeatis. Burm. Afr.* 134. *Tab.* 49. *fol.* 1. *Thymelæa* with a woolly Head, and many ſmall pointed Leaves.

9. DAPHNE *foliis linearibus acutis, floribus racemoſis axillaribus. Daphne* with very narrow acute Leaves, and Flowers growing in Bunches from the Sides of the Branches. This is the *Thymelæa fruteſcens roriſmarini folio, flore albo. Plum. Cat.* Shrubby *Thymelæa* with a Roſemary Leaf and white Flower.

The 1ſt Sort grows common in the Woods in many Parts of *England*, and is commonly known by the Title of Spurge Laurel; of late Years the poor People get the young Plants out of the Woods, and carry them about Town to ſell in the Winter and Spring. This is a low ever-green Shrub, which riſes with ſeveral Stalks from the Root, to the Height of 2 or 3 Feet, dividing upward into ſeveral Branches, garniſhed with thick Spear-ſhaped Leaves, which come out irregularly on every Side, ſitting pretty cloſe to the Branches, they are ſmooth and of a lucid green; between theſe, toward the upper Part of the Stalks, come out the Flowers in ſmall Cluſters; they are of a yellowiſh green, and appear ſoon after *Chriſtmas*, if the Seaſon is not very ſevere; theſe are ſucceeded by oval Berries, which are green till *June*, when they ripen and turn black, ſoon after which they fall off. The whole Plant is of a hot cauſtick Taſte, burning and inflaming the Mouth and Throat. The Leaves continue green all the Year, ſo theſe Plants are ornamental in Winter; as they will thrive under tall Trees, are very proper to fill up the Spaces in Plantations.

The 2d Sort grows naturally in *Germany*, and there has been a Diſcovery made of its growing in ſome Woods near *Andover*, from whence a great Number of Plants have been taken of late Years. This has been long cultivated in the Nurſery Gardens as a flowering Shrub, and is a very ornamental Plant in Gardens, very early in the Spring, before others make their Appearance. There are two diſtinct Sorts of this, one with a white Flower ſucceeded by yellow Berries, the other with Peach-coloured Flowers and red Fruit. Theſe are by ſome ſuppoſed to be accidental Varieties ariſing from the ſame Seeds, but I have ſeveral Times raiſed theſe Plants from Seeds, and always found the Plants come up the ſame as thoſe from which the Seeds were taken, therefore may be called different Species. There is a Variety of the Peach-coloured Mezereon, with Flowers of a much deeper Colour than the common, but theſe I have always found to vary in their Colours when raiſed from Seeds.

This Shrub grows to the Height of 5 or 6 Feet, with a ſtrong woody Stalk, putting out many woody Branches on every Side, ſo as to form a regular Head; the Flowers come out very earrly in the Spring, before the Leaves appear, growing in Cluſters all round the Shoots of the former Year; there are commonly 3 Flowers produced from each Knot or Joint, ſtanding on the ſame ſhort Foot Stalk; theſe have ſhort ſwelling Tubes, divided into 4 Parts at the Top which ſpread open; they have a very fragrant Odour, ſo that where there are Plenty of the Shrubs growing together, they perfume the Air to a conſiderable Diſtance round them: after the Flowers are paſt, the Leaves come out, which are ſmooth, Spear-ſhaped, and placed without Order; they are about two Inches long, and three Quarters broad in the Middle, gradually leſſening to both Ends; the Flowers are ſucceeded by oval Berries, which ripen in *June*; thoſe of the Peach-coloured Flowers are red, and thoſe of the white yellow. The Flowers appear in *February* and *March*, and ſometimes in mild Winters they appear in *January*. This Plant was formerly uſed in Medicine, but as every Part of it has a hot cauſtick Taſte, few preſcribe the Uſe of it at preſent.

This is propagated by Seeds, which ſhould be ſown on a Border expoſed to the Eaſt, ſoon after the Berries are ripe; for if they are not ſown till Spring, they often miſcarry, and always remain a Year in the Ground, before the Plants appear; whereas thoſe that are ſown in *Auguſt*, will grow the following Spring, ſo that a Year is ſaved, and theſe never fail. When the Plants come up, they require no other Care but to keep them clean from Weeds, and if the Plants are not too cloſe together, they may continue in the Seed Bed, to have the Growth of two Summers, eſpecially if they do not make great Progreſs the firſt Year; then at *Michaelmas*, when the Leaves are ſhedding, they ſhould be carefully taken up ſo as not to break or tear their Roots, and planted into a Nurſery at about 16 Inches Row from Row, and 8 or 9 Inches aſunder in the Rows, in this Nurſery they may remain 2 Years, by which Time they will be fit to remove to the Places where they are deſigned to remain; the beſt Seaſon to tranſplant theſe Trees is in Autumn, for as the Plants begin to vegetate very early in the Spring, it is not proper to tranſplant them at that Seaſon. Theſe Plants grow beſt in a light ſandy Earth which is dry; for in cold wet Land they become moſſy, and make little Progreſs, ſo that upon ſuch Soils they never grow to any Size, and produce few Flowers.

Although the Berries of this Tree are ſo very acrid, as to burn the Mouth and Throat of thoſe who may incautiouſly taſte them, yet the Birds greedily devour them, as ſoon as they begin to ripen; ſo that unleſs the Shrubs are covered with Nets to preſerve the Berries, they will all be deſtroyed before they are fit to gather. There are of this and the former Sort, ſome Plants with variegated Leaves, but the plain are much more beautiful.

The 3d Sort grows naturally in *Spain*, *Italy*, and the South of *France*, where it riſes to the Height of 3 or 4 Feet, with a ſingle Stalk covered with a light coloured Bark; the Flowers come out in Cluſters on the Sides of the Stalks, of an herbaceous Colour, ſo make but little Appearance; they appear early in Spring, and are ſucceeded by ſmall Berries which are yellowiſh when ripe.

The 4th Sort grows naturally in the South of *France*, from whence I received the Seeds. This is a low ſhrubby Plant, ſending out ſeveral weak Stalks from the Root, which grow about a Foot long, and ſpread about irregularly, theſe are tough, ſtringy, and covered with a light Bark, the Leaves are ſmall, of an oval Form and are very ſoft, white and ſhining like Satin; theſe ſit pretty cloſe to the Stalks; between theſe the Flowers come out in thick Cluſters from the Side of the Stalks, they are white, and are ſucceeded by roundiſh Berries having one hard Seed. It flowers in *June*, but doth not ripen Seeds here.

The 5th Sort grows on the Mountains near *Geneva*, and in *Italy*, where it riſes about 3 Feet high; the Flowers come out in Cluſters from the Side of the Branches, early in Spring. The Leaves are Spear-ſhaped ending in blunt Points, and are hoary on their under Side. The Flowers are ſucceeded by ſmall roundiſh Berries which turn red when ripe.

The 6th Sort grows naturally on the *Alps*, and the Mountains near *Verona*, from whence it was ſent me; this is a very humble Shrub, ſeldom growing more than one Foot high with ligneous Stalks, which put out ſeveral Side Branches; theſe are garniſhed with narrow Spear-ſhaped Leaves placed round the Stalks without Order; the Branches are terminated by ſmall Cluſters of purple Flowers which ſtand erect, having no Foot Stalks, the Tubes of the Flowers are longer and narrower than thoſe of the Mezereon, and the Mouth is cut into 4 acute Parts which are erect. Theſe Flowers emit a pleaſant Odour, and appear early in Spring, but do not produce Seeds here.

The 7th Sort grows naturally about *Montpelier*, this riſes with a ſhrubby Stalk, about two Feet high, dividing into many ſmaller Branches, which are cloſely garniſhed with narrow Spear-ſhaped Leaves ending in acute Points, theſe grow erect, the Ends of the Branches are terminated by Panicles of Flowers, which are much ſmaller than thoſe of the Mezereon, having ſwelling Tubes, which are contracted at the Mouth. Theſe appear in *June*, but are not ſucceeded by Seeds here.

The 8th Sort grows naturally at the *Cape of Good Hope*, this Shrub riſes to the Height of 5 or 6 Feet, dividing upward into ſeveral Branches which grow erect, and are covered with a white Bark, theſe are very cloſely garniſhed with ſmall narrow Leaves, which come out on every Side of the Branches without Order, ſpreading open, the Tops are terminated by woolly Heads, out of which the Flowers come in ſmall Cluſters; they are white, having oblong Tubes, divided into 4 obtuſe Segments at the Mouth, which ſpread open. Theſe Plants do not produce Seeds in *Europe*.

The 9th Sort grows naturally in many Iſlands in the *Weſt-Indies*, it was ſent me from *Antigua*. This Shrub riſes to the Height of 4 or 5 Feet, with a woody Stalk, covered with a rugged Bark of an Aſh Colour; the upper Part of the Branches are garniſhed with Leaves about the Size, and the ſame Form as thoſe of Roſemary; between the Leaves, the Flowers come out in ſmall Bunches upon Foot Stalks an Inch long; they have ſhort Tubes, cut into 4 Parts at the Top, and are white; theſe are ſucceeded by ſmall round Berries of a brown Colour when they are ripe.

The 3d, 4th and 7th Sorts are tolerable hardy, ſo will live through the Winters in *England* in the open Air, provided they are in a dry Soil and warm Situation. The 5th and 6th Sorts are as hardy as the common Mezereon, ſo are not in Danger of being hurt by Froſt in *England*, but they are all very difficult to keep in Gardens, becauſe neither of them will bear to be tranſplanted. I have ſeveral Times raiſed the Plants from Seeds, which have ſucceeded well in the Places where they were ſown, but whenever they were removed, they certainly died though performed at different Seaſons, and with the greateſt Care, and the ſame has happened to every other Perſon who has raiſed any of theſe Plants; and ſome of my Correſpondents have aſſured me, they have frequently attempted to remove theſe Plants from their natural Places of Growth, into their Gardens, and have choſen Plants of all Sizes from the youngeſt Seedlings to the oldeſt Plants, yet have never ſucceeded in it, though they have uſed their utmoſt Care, and have performed it at different Seaſons. Therefore thoſe who are deſirous to have theſe Plants in their Gardens, muſt procure the Seeds from the Countries where they naturally grow, and when they arrive, they ſhould be immediately ſown where they are deſigned to remain, which for the 3d, 4th, and 7th Sorts, ſhould be on a very warm dry Border, where, if there is a Foundation of Lime Rubbiſh or Chalk, under the upper Surface of the Ground, the Plants will thrive better and continue much longer, than in better Ground; all the Culture they require, is to keep the Place clean from Weeds, for the leſs the Ground is ſtirred near their Roots, the better the Plants will thrive; for they naturally grow on poor ſhallow Land, and out of Crevices in Rocks ſo the nearer the

Soil approaches to this, the more likely the Plants will be to ſucceed.

The 5th and 6th Sorts may have a cooler Situation; if theſe are ſown where they may only have the Morning Sun, they will thrive better than in a warmer Situation, and the Ground near the Roots ſhould not be diſturbed, therefore in the Choice of the Situation, take care not to ſow them near other Plants, which may require tranſplanting, or to have the Ground dug and looſened. The Seeds of theſe coming from diſtant Counties, rarely arrive here Time enough to ſow in Autumn, ſo that when they are ſown in Spring, the Plants do not appear till the ſucceeding Spring; and I have ſometimes had the Seeds remain till the ſecond Spring in the Ground, before the Plants have appeared, but as this may be too long for many People to leave the Ground undiſturbed, they had better put the Seeds into ſmall Pots of Earth, and bury them in the Ground the firſt Summer, and in Autumn take them up, and ſow them where they are to ſtand; by this Method the Seeds will be prepared to vegetate the following Spring.

The 5th Sort is a beautiful ſweet Shrub, ſo deſerves a Place in Gardens, as much as any of thoſe we cultivate for Ornament. The 1ſt and 2d Sorts are ſometimes uſed in Medicine as before obſerved, but being of a very cauſtick Nature, are ſeldom preſcribed, but if proper Trials were made with Caution, it is not doubted but they may be found very efficacious in many ſtubborn Diſorders; for ſome very ignorant Quacks have performed great Cures with theſe Plants. The 7th Sort produces the *Grana nitida* of the Shops.

The 8th Sort grows naturally at the *Cape of Good Hope*, ſo will not live abroad in Winter in *England*, but requires a good Green-houſe to preſerve it. This Plant is very difficult to keep or propagate in Gardens.

The 9th Sort will not thrive in *England*, unleſs preſerved in the Bark Stove, this will not bear tranſplanting, for I raiſed ſeveral from Seeds which throve pretty well while they continued in the Pot where they were ſown, but when tranſplanted, they all decayed.

DATISCA. *Lin. Gen. Plant.* 1003. *Cannabina. Tourn. Cor.* 52. Baſtard Hemp.

The *Characters* are,

They are male and female in different Plants, the male Flowers have an Empalement compoſed of 5 *narrow acute Leaves; theſe have no Petals, and ſcarce any viſible Stamina, but have* 10 *Summits which are much longer than the Empalement. The female Flowers have no Petals, but the Empalements are the ſame as the male, having an oblong pervious Germen ſupporting* 3 *Styles, crowned by ſingle Stigmas; the Empalement afterward becomes an oblong triangular Capſule, opening with* 3 *Valves, having one Cell filled with ſmall Seeds adhering to the* 3 *Sides of the Capſule.*

The *Species* are,

1. DATISCA *caule lævi. Lin. Sp. Pl.* 1037. *Datiſca* with a ſmooth Stalk. This is the *Cannabina Cretica florifera & fructifera. Tourn. Cor.* 52. Baſtard Hemp of *Crete*, flowering and fruitful.

2. DATISCA *caule hirſuto. Lin. Sp. Plant.* 1037. *Datiſca* with a rough Stalk.

The 1ſt Sort grows naturally in *Crete*, and other eaſtern Countries; this hath a perennial Root, from which ariſe ſeveral herbaceous Stalks near 4 Feet high; theſe are garniſhed with winged Leaves placed alternately, each being compoſed of 3 Pair of Lobes terminated by an odd one; theſe are 2 Inches long and half an Inch broad, ending in acute Points, they are deeply ſawed on their Edges, and of a light green. The Flowers come out in long looſe Spikes from the Side of the Stalks at the Wings of the Leaves, but having no Petals, make but a poor Appearance. The Summits of the male Flowers being pretty long, and of a bright yellow Colour, are the only viſible Parts of the Flowers at any Diſtance.

The Flowers on the female Plants are ſucceeded by oblong, three cornered Capſules filled with ſmall Seeds, which adhere to the 3 Valves. The Plants flower in *June*, and the Seeds ripen in *September*. The Stalks decay in Autumn and new ariſe in Spring.

This Sort may be propagated by parting the Roots in Autumn, when the Stalks decay (which is the beſt Time to tranſplant them) but they muſt not be parted too ſmall; they may be planted in any open Beds, not under the Drip of Trees, and will require no other Culture, but to keep them clean from Weeds.

It may alſo be propagated by Seeds, but theſe ſhould be taken from ſuch Plants as grew near male Plants, otherwiſe they will not ſucceed; and if the Seeds are not ſown in Autumn, they ſeldom grow the firſt Year. The ſeedling Plants when they riſe, require no Care but to keep them clean from Weeds till Autumn, when they may be tranſplanted where they are to grow.

The 2d Sort grows naturally in *Canada*, and other Parts of *North America*. This differs from the former, in having hairy Stalks, which grow taller; the Leaves are larger, and do not ſtand ſo near each other on the Stalks. It is equally hardy with the 1ſt Sort, and may be propagated in the ſame Manner, but ſhould have a more ſhady Situation, and a moiſter Soil.

DATURA. *Lin. Gen. Plant.* 218. *Stramonium. Tourn. Inſt. R. H.* 118. Thorn Apple.

The *Characters* are,

The Flower is of one Petal which is Funnel-ſhaped, having a long cylindrical Tube, ſpreading open at the Top, which in ſome Species is pentangular, each Angle being pointed; the Empalement of the Flower is permanent, ſwelling in the Middle, 5 *cornered, and tubulous; the Flower hath* 5 *Stamina, as long as the Empalement, terminated by oblong compreſſed Summits; it hath an oval Germen ſupporting an upright Style, crowned by a thick obtuſe Stigma. The Germen becomes an oval Capſule divided into* 4 *Cells by a croſs intermediate Partition, which are filled with Kidney-ſhaped Seeds adhering to the Partition.*

The *Species* are,

1. DATURA *fructu rotundo erecto pericarpio ſpinoſo. Datura* with a round erect Fruit having a prickly Cover. This is the *Stramonium fructu ſpinoſo rotundo, flore albo ſimplici. Tourn. Inſt. R. H.* 118. Thorn Apple with a round prickly Fruit, and a ſingle white Flower.

2. DATURA *fructu ovali erecto, pericarpio ſpinoſo. Datura* with an oval erect Fruit and a prickly Cover. This is the *Stramonium fructu ſpinoſo oblongo, flore violaceo. Tourn. Inſt. R. H.* 119. Thorn Apple with an oblong prickly Fruit, and a Violet coloured Flower.

3. DATURA *caule tomentoſo, calycibus bifidis cylindricis, floribus decangularibus, fructibus rotundis nutantibus. Datura* with a woolly Stalk, a cylindrical bifid Empalement,

a ten cornered Flower, and round nodding Fruit. *Stramonium folio hyoſcyami, flore toto candido, fructu propendente rotundo, ſpinis inoxiis ornato. Boerh.* Thorn Apple with a Henbane Leaf, a Flower wholly white, and a round hanging Fruit ſet with harmleſs Prickles.

4. DATURA *fructu rotundo nutante, pericarpio ſpinoſo, ſpinis robuſtioribus. Datura* with a round nodding Fruit, having a prickly Cover, and very ſtrong Spines. This is the *Stramonium ferox. Bocc.* 50. Rough Thorn Apple.

5. DATURA *fructu oblongo erecto, pericarpio ſpinoſo. Datura* with an oblong erect Fruit having a prickly Cover. *Stramonium fructu oblongo ſpinoſo flore albo. Tourn.* Thorn Apple with an oblong prickly Fruit and a white Flower commonly called *American* Thorn Apple.

6. DATURA *fructu rotundo nutante, pericarpio carnoſo tuberculoſo. Datura* with a round nodding Fruit, having a fleſhy Cover full of Tubercles. This is the *Stramonium Ægyptiacum flore pleno, intus albo, foris violaceo. Tourn. Egyptian* Thorn Apple with a double Flower, white on the Inſide and Violet coloured on the Outſide.

7. DATURA *pericarpiis inermibus nutantibus, caule arboreo. Lin. Sp. Plant.* 179. *Datura* with a nodding Fruit having an unarmed Cover, and a Tree-like Stalk. This is the *Stramonioides arboreum, oblongo & integro folio, fructu lævi, vulgò. Flori pondio.* Tree Thorn Apple with an entire Leaf and a ſmooth Fruit, commonly called Hanging Flower by the *Spaniards.*

The Sorts here enumerated are undoubted diſtinct Species, notwithſtanding ſome late Writers have ſuppoſed Part of them to be only ſeminal Variations; for I have cultivated them above 30 Years, during which Time, I have never obſerved either of them to vary from one Sort to another; all the Difference which any of them have ever ſhewn, has been in the double Flowers becoming ſingle, therefore I have omitted theſe and have only mentioned one with double Flowers, which ſometimes changes to ſingle, at other Times they are with double and treble Tubes, ſtretched out beyond each other like the Primroſes called Hoſe in Hoſe. Therefore theſe Varieties ſhould be only conſidered as one diſtinct Sort. There is alſo a double Flower of the 3d Sort, which is much eſteemed by the Curious, but this frequently degenerates to have ſingle Flowers, ſo is not to be mentioned as a diſtinct Species. I alſo raiſed another Sort from Seeds, which the late Dr. *Houſtoun* ſent me from *La Vera Cruz,* which approached near to the 3d Sort, but the lower Part of the Tube was of a Violet Colour, the upper was a pure white, but as the Plants decayed without producing good Seeds, ſo I had not Opportunity enough, to determine if it was a diſtinct Species.

The 1ſt Sort here enumerated, is the moſt common Sort of Thorn Apple; and was probably firſt introduced from *Italy* or *Spain* where it naturally grows, but it is now become ſo common about *London,* and other great Towns in *England,* as to appear like a native Plant, for there are few Gardens or Dunghills without this Plant in Summer, though it is only near ſuch Places, where the Plants may have been cultivated firſt in Gardens, and wherever any of theſe Plants are permitted to ſeed, they will furniſh a Supply of Plants for ſome Years, as they produce a vaſt Quantity of Seeds, ſome of which will lie Years in the Ground, and when turned up to the Air will vegetate.

This Sort ſeldom grows much more than 2 Feet high, dividing into many ſtrong irregular Branches which are hollow; theſe are garniſhed with large ſmooth Leaves divided into irregular Angles, and emit a fœtid Odour. The Flowers come out firſt from the Diviſions of the Branches, and afterward near the Extremities; they have long ſwelling Tubes, which are dilated at the Top into large pentagonal Brims, each Angle ending in a long Point or Ligula; theſe ſtand in long green five cornered Empalements, and are ſucceeded by large roundiſh Seed Veſſels, covered with thick Thorns, divided by 4 Furrows, to which adhere the Partitions, which ſeparate the 4 Cells, filled with black Kidney-ſhaped Seeds. It flowers in *July, Auguſt* and *September,* and the Seeds ripen in Autumn, which if permitted to ſcatter, will fill the Ground with Plants the following Years. There was formerly a cooling Ointment made with the Leaves of this Plant and Hogs Lard, which was greatly eſteemed for Burns and Scalds.

The 2d Sort grows naturally in moſt Parts of *America*; I have frequently received the Seeds from the Iſlands in the *Weſt-Indies,* alſo from the Northern Parts of *America.* This riſes with a purple ſtrong Stalk, to the Height of 4 or 5 Feet, dividing into many ſtrong Branches, garniſhed with Leaves ſhaped ſomewhat like thoſe of the former Sort, but larger, and have a greater Number of Angles and Laciniæ on their Edges; the Flowers have longer Tubes, and are of a purple Colour; the Fruit is alſo much longer, and theſe Differences are permanent. This is equally hardy with the former, and if the Seeds are permitted to ſcatter, the Plants will become troubleſome Weeds.

The 3d Sort hath a ſtrong woolly Stem, which riſes 3 Feet high, and divides into many Branches; theſe are woolly, as are alſo the Leaves and Empalement of the Flower; the Leaves are almoſt entire, having only 2 or 3 ſlight Indentures on their Edges; the Flowers have very long Tubes, which extend beyond the bifid Empalement, then they ſpread out very broad, where the Brim is divided into 10 obtuſe Angles; they are of a pure white above, but the Tubes have a Tincture of green within. Theſe are ſucceeded by roundiſh Fruit, cloſely covered with long ſoft Thorns, they are divided into 4 Cells as the other, but the Seeds of this are of a light brown Colour when ripe.

This Plant is not ſo hardy as the others, ſo the Seeds muſt be ſown on a gentle hot Bed in Spring, and the Plants afterward treated as the Marvel of *Peru* and other hardier Kinds of annuals, and may be tranſplanted into the full Ground the latter End of *May.* They will flower in *July,* and the Seeds will ripen in Autumn.

The 4th Sort is of humbler Growth, ſeldom riſing more than a Foot and Half high, ſpreading out into many Branches, garniſhed with Leaves ſomewhat like thoſe of the firſt Sort but ſmaller, and ſtand on longer Foot Stalks; the Flowers are like the firſt Sort, but ſmaller; the Fruit is round, and armed over with very ſtrong ſharp Thorns. The Seeds are black when ripe.

This Sort is too tender to be ſown in the full Ground in *England,* ſo the Plants ſhould be raiſed on a hot Bed, and afterward tranſplanted into Borders as the third.

The 5th Sort grows naturally in *North America*; this reſembles the firſt Sort while young, but afterward greatly differs from it; the Stalks of this riſe 4 or 5

Feet high, are very ſmooth, of a light lucid green, as are alſo the Leaves; the Flowers are longer, and have a greater Reſemblance to thoſe of the 2d Sort. Theſe Differences have always continued for above 30 Years, where it had been carefully cultivated. It is equally hardy with the firſt, ſo will propagate itſelf in Plenty, where it remains to ripen Seeds.

The 6th Sort grows naturally in *Egypt*, and *India*; this riſes with a fine poliſhed purple Stalk, 4 Feet high, dividing into ſeveral Branches, garniſhed with large, ſmooth, ſinuated Leaves, ſtanding on pretty long Foot Stalks. The Flowers are produced at the Diviſions of the Branches; theſe have large ſwelling Tubes, which expand very broad at Top, their Brims being divided into 10 Angles, each ending with a long ſlender Point. The Flowers are of a beautiful purple on their Outſide, and a ſattiny white within, ſome of theſe are ſingle, others have 2 or 3 Flowers ſtanding one within another, and ſome are double, having 4 or 5 Petals within each other of equal Length, ſo as to appear a full Flower at the Brim; they have an agreeable Odour at firſt, but if long ſmelt to, become leſs agreeable, and are narcotick. If theſe Plants are brought forward on a hot Bed in Spring, and in *June* planted out on a warm Border of rich Earth, they will flower very finely in *July* and *Auguſt*, but unleſs they are covered with Glaſſes, the Seeds ſeldom ripen well in *England*. The Fruit is round, and grows nodding downward; the Seed Veſſel is thick and fleſhy, as are alſo the intermediate Partitions which divide the Cells. The Outſide of the Fruit is covered with blunt Protuberances, and the Seeds are of a bright brown Colour when ripe.

The 7th Sort was ſent me from *La Vera Cruz*, where it grows naturally; this riſes with a woody Stalk to the Height of 12 or 14 Feet, dividing into ſeveral Branches, garniſhed with oblique Leaves, 6 Inches long and2 and a Half broad in their broadeſt Part, growing narrower at each End; they are oblique to the Foot Stalk, which ſtands nearer to one Side than the other; they are downy, and ſtand on long Foot Stalks. The Flowers come out at the Diviſion of the Branches; theſe have a looſe tubular Empalement, near 4 Inches long, which opens at the Top on one Side like a Spatha, or Sheath, within the Empalement; the Tube of the Flower is narrow, but immediately above it ſwells very large for near 6 Inches in Length, then ſpreads open at the Brim, where it is divided into 5 Angles, which terminate in very long Points; they are white, with ſome longitudinal Stripes, of a pale yellow on their Outſide; theſe are ſucceeded by round ſmooth Capſules, filled with Kidney-ſhaped Seeds.

This Tree is one of the greateſt Ornaments to the Gardens in *Chili*; where the Inhabitants propagate it with great Care; when the Flowers are fully blown, they make a fine Appearance, and a ſingle Tree will perfume the Air of a large Garden.

This Plant is tender, ſo requires to be kept in a Stove in *England*; the Seeds of this muſt be procured from the Places where the Trees grow naturally; they ſhould be perfectly ripe when gathered, and carefully put up, that the Vermin cannot get to them to deſtroy them. Moſt of the Seeds ſent me, were devoured in their Paſſage by Inſects, ſo but few Plants were raiſed; there were 2 or 3 raiſed in the Gardens of the late Lord *Petre*, and 2 in the *Chelſea* Garden, one of which came ſo far as to flower, but periſhed without producing Seeds, ſo that at preſent I believe there are not any of the Plants in *England*.

DAUCUS. *Lin. Gen. Pl.* 296. *Tourn.* The Carrot.

The *Characters* are,

It hath an umbelliferous Flower, the principal Umbel is compoſed of a great Number of ſmall ones, called Rays, which are ſhort, and in Cluſters. The Involucrum of the principal Umbel is compoſed of many narrow Leaves, having winged Points; theſe are ſcarce ſo long as the Umbel; thoſe of the Rays are ſhorter and ſimple. The Flowers have 5 Heart-ſhaped Petals, which turn inward; thoſe which compoſe the Rays are unequal in Size, but thoſe of the Diſk are nearly ſo; theſe have each 5 hairy Stamina, terminated by roundiſh Summits. The Germen ſits under the Flower, ſupporting two reflexed Styles, crowned by obtuſe Stigmas. The Germen becomes a ſmall roundiſh ſtriated Fruit, dividing in two Parts, each having a ſingle Seed, convex and furrowed on one Side, and plain on the other.

The *Species* are,

1. Daucus *ſeminibus hiſpidis, radice tenuiore fervido.* Carrot with a prickly Seed, and a ſlender hot Root. The *Daucus vulgaris. Cluſ.* Common wild Carrot.

2. Daucus *ſeminibus hiſpidis, radice carnoſo eſculento.* Carrot with a prickly Seed, and a fleſhy eatable Root. This is the *Daucus ſativus, radice aurantii coloris. Tourn.* Manured Carrot, commonly called Orange Carrot.

3. Daucus *radiis involucri planis, laciniis recurvis. Prod. Leyd.* 97. Carrot with plain Rays to the Involucrum and recurved Jags. This is the *Daucus maritimus lucidus. Tourn.* Shining martime Carrot.

4. Daucus *caule hiſpido, ſegmentis foliorum latioribus.* Carrot with a prickly Stalk, and broader Segments to the Leaves. This is the *Paſtinaca Oenanthes folio. Bocc. Rar. Pl.* 75. Parſnep with a Water Dropwort Leaf.

5. Daucus *radiis involucri pinnatifidis, umbellis duplo longioribus, foliolis acutis.* Carrot with Wing-pointed Rays to the Involucrum, which are twice the Length of the Umbel, and acute Leaves. *Daucus tenuifolius Creticus, radiis umbellæ longioribus. Tourn.* Narrow leaved Carrot of *Crete*, with Rays longer than the Umbel.

6. Daucus *radiis involucri pinnatifidis foliis radicalibus inciſo obtuſis, caulinis acutioribus.* Carrot with Wing-pointed Rays to the Involucrum, lower Leaves cut into obtuſe Segments, and thoſe on the Stalks very acute. This is the *Daucus maritimus annuus, foliis petroſelini latioribus & inciſis. Tilli. Hort. Piſ.* Annual Sea Carrot with broad Parſley Leaves, cut into acute Segments.

7. Daucus *ſeminibus nudis. Hort. Cliff.* 89. Carrot having naked Seeds. This is the *Gingidium umbellâ oblongâ. C. B. P.* 151. *Gingidium* with an oblong Umbel.

The 1ſt Sort is the common wild Carrot, which grows by the Side of Fields, and in Paſture Grounds in many Parts of *England*. The Plants of this Sort do not differ greatly in Appearance from the Garden Carrot, which has led ſome Perſons into an Opinion of their being the ſame, but thoſe who have attempted to cultivate the wild Sort, are fully convinced of their being diſtinct Plants. I have tried to cultivate the wild Sort for many Years, but could never get the Seeds which were ſown in the Spring to grow, upon which I ſowed the

the Seeds in Autumn, Part of which have come up well; theſe Plants I cultivated in the ſame Manner as the Garden Carrot, but could not improve the Roots in the leaſt, for they continued to be ſmall, ſticky, and of a hot biting Taſte; and this has been always the Caſe, whereever the Plants have been ſown; therefore there can be no Doubt of their being different Plants. The Seeds of this Sort are uſed in Medicine, and eſteemed good to bring away Gravel; it is an excellent Diuretic, but inſtead of theſe Seeds, the Shops are uſually ſupplied with old Seeds of the Garden Carrot, when they have loſt their vegetative Quality, then the Seedſmen ſell them to the Druggiſts for medicinal Uſe, but certainly all Seeds which are too old to grow, can have but little Virtue remaining in them.

There are ſeveral Varieties of the Garden Carrots, which differ in the Colour of their Roots, and theſe Variations may be continued, where there is proper Care taken to mix the different Sorts together in the ſame Garden; but the Orange Carrot is generally eſteemed in *London*, where the yellow and the white Carrots are ſeldom cultivated.

The dark red, or purple Carrot, I take to be a diſtinct Sort, but as it is much tenderer, I have not had an Opportunity of ſeeing it in Flower, for the Roots were all deſtroyed by the firſt Froſts in Autumn. The Seeds of this Sort were ſent from *Aleppo*, which ſucceeded very well, the Roots were not ſo large as thoſe of the other Sorts of Carrots, and were of a purple Colour, very like that of a deep coloured Radiſh, they were very tender and ſweet, the Leaves were finer cut than thoſe of the common Carrot, and leſs hairy.

The 2d Sort is commonly cultivated in Gardens for the Kitchen; and the different Varieties of it are, in ſome Places, eſteemed, though in *London* the Orange Carrot is preferred to all the other.

They are propagated at 2 or 3 different Seaſons, or ſometimes oftener, where People are fond of young Carrots, whenever they can be procured. The firſt Seaſon for ſowing the Seeds is ſoon after *Chriſtmas*, if the Weather is open, which ſhould be in warm Borders, near Walls, Pales, or Hedges, but they ſhould not be ſown immediately cloſe thereto; but a Border of Lettuce, or other young Sallad Herbs, of about a Foot wide, ſhould be next the Wall, *&c.* for if the Carrots were ſown cloſe to the Wall, they would draw up weak, without making any tolerable Roots.

Theſe delight in a warm light ſandy Soil, which ſhould be dug pretty deep, that the Roots may the better run down; for if they meet with any Obſtruction, they are very apt to grow forked, and ſhoot out lateral Roots, eſpecially where the Ground is too much dunged the ſame Year that the Seeds are ſown, which will alſo occaſion their being Worm-eaten; it is therefore the better Method to dung the Ground for Carrots, the Year before they are ſown, that it may be conſumed, and mixed with the Earth; but in ſuch Places where there has not been Ground ſo prepared the Year before, and there may be a Neceſſity for dunging it the ſame Year the Carrots are ſown; the Dung ſhould be well rotted, and thinly ſpread over the Ground, and in Digging it into the Ground, great Care ſhould be taken to diſperſe it equally, and not to bury it in Heaps, for that will ſtop the Roots of the Carrots in their downright Growth, and cauſe them to be ſhort and forky. Where the Ground is inclinable to bind, there cannot be too much Care taken to break and divide the Parts; therefore in digging the Land for Carrots, there ſhould never be large Spits taken, but they muſt be very thin, and the Clods well broken; which, if not attended to by the Maſter, is ſeldom properly performed by Workmen, who are too apt to hurry over their Work, if they are not well obſerved.

The Ground when dug ſhonld be laid level and even, otherwiſe when the Seeds are ſown and the Earth raked over, Part of them will be buried too deep, and others in Danger of being drawn into Heaps; ſo the Plants will come up in Bunches, and other Parts of the Ground be naked, which ſhould be carefully avoided.

Theſe Seeds having a great Quantity of ſmall forked Hairs on their Borders, by which they cloſely adhere, are difficult to ſow even, ſo as not to come up in Patches; you ſhould therefore rub it well through both Hands, to ſeparate the Seed before it is ſown; then you ſhould chooſe a calm Day to ſow it, for if the Wind blows, it will be impoſſible to ſow it equal; for the Seeds being very light, will be blown into Heaps. When the Seed is ſown, tread the Ground cloſe with your Feet, to bury the Seed, and then rake it level.

When the Plants are come up and have got 4 Leaves, hoe the Ground with a ſmall Hoe about 3 Inches wide, cutting down all young Weeds, and ſeparating the Plants to 4 Inches Diſtance each Way, that they may get Strength; in about 3 Weeks or a Month after, when the Weeds begin to grow again, hoe the Ground over a ſecond Time, in which you ſhould be careful not to leave 2 Carrots cloſe to each other, as alſo to ſeparate them to a greater Diſtance, cutting down all Weeds, and ſlightly ſtirring the Surface in every Place, the better to prevent young Weeds from ſpringing, alſo to facilitate the Growth of the young Carrots.

In about 3 Weeks or a Month after, you muſt hoe them a third Time, and clear the Weeds as before; now you ſhould cut out the Carrots to the Diſtance they are to remain, which muſt be proportioned to the Size you intend to have them grow: If they are to be drawn while young, 5 or 6 Inches aſunder will be ſufficient; but if they are to grow large, they ſhould be left 8 or 10 Inches diſtant every Way; you muſt alſo keep them clear from Weeds, which, if ſuffered to grow among the Carrots, will greatly prejudice them.

The 2d Seaſon for ſowing theſe Seeds is in *February*, on warm Banks near the Shelter of a Wall, Pale, or Hedge; but thoſe intended for the open large Quarters, ſhould not be ſown before the Beginning of *March*, nor ſhould you ſow any later than the End of the ſame Month; for thoſe which are ſown in *April* or *May* will run up to Seed before their Roots have any Bulk, eſpecially if the Weather proves hot and dry.

In *July* you may ſow again, for an autumnal Crop; and at the End of *Auguſt* you may ſow ſome to ſtand the Winter; by which Method you will have Carrots in *March*, before the Spring ſowing will be fit to draw; but theſe are ſeldom ſo well taſted, and are often very tough and ſticky. However, as young Carrots are generally expected early in the Spring, moſt People ſow ſome at this Seaſon; but theſe ſhould be ſown on warm Borders and dry Land, otherwiſe they are ſeldom good. If the Winter ſhould prove very ſevere, it will be proper to cover the young Carrots with Peaſe Haulm, the Haulm of Aſparagus, or ſome ſuch light Covering, to prevent the Froſt from penetrating the Ground, which often deſtroys the Carrots, where this Care is wanting: But if in very hard Winters the Carrots ſhould be all deſtroyed which were ſown in Autumn, there ſhould be a hot Bed made early in Spring to ſow ſome, which will be fit for Uſe long before any that are ſown in the full Ground: Theſe Beds ſhould be earthed 15 or 16 Inches deep, that the Roots may have a proper Depth of Soil to run down: If theſe Beds are lined with hot Dung twice, at Times when the Heat of the Beds decline, it will greatly forward the Growth of the Carrots, but there ſhould be great Care taken not to draw the Plants up too weak; theſe may be allowed to grow cloſer together, than thoſe ſown in the full Groutd, becauſe they will be drawn for Uſe very young. Many People mix ſeveral other Sorts of Seeds, as Leek, Onion, Parſnep, Radiſh, *&c.* among their Carrots; and others plant Beans, *&c.* but, in my Opinion, neither of theſe Methods are good; for, if there is a full Crop of any one of theſe Plants, there can be no Room for any Thing elſe amongſt them, ſo that what is got by the one is loſt by another; and beſides, it is not only more ſightly, but better, for the Plants of each Kind to be ſown ſeparate; alſo by this Means your Ground will be clear, when the Crop is gone, to ſow or plant any Thing elſe; but when 3 or 4 Kinds are mixed together, the Ground is ſeldom at Liberty before the ſucceeding Spring: Beſides, where Beans, or any other tall-growing Plants, are planted among Carrots, they are apt to make them grow more in Top than Root; ſo that they will not be half ſo large as if ſown ſingly, without any other Plants amongſt them.

The Covetouſneſs of ſome Gardeners will not permit them to cut out their Carrots to a proper Diſtance when they hoe them, ſo that by leaving them cloſe, they draw each other up weak; and if they are drawn while young, they never recover their Strength afterward ſo perfectly, as to grow near the Size of thoſe, which are properly thinned at their firſt hoeing: Therefore, where the Carrots are deſigned to have large Roots, they muſt never ſtand too cloſe, nor ſhould they have any other Crop mixed with them.

This Root has been long cultivated in Gardens for the Table, but has not till of late Years been cultivated in the Fields for Cattle, nor has it been practiſed as yet, but in few Parts in *England*; it is therefore greatly to be wiſhed, that the Culture of it was extended to every Part of *England*, where the Soil is proper for the Purpoſe; for there is ſcarce any Root yet known, which more deſerves it, being a very hearty good Food for moſt Sorts of Animals. One Acre of Carrots, if well planted, will fatten a greater Number of Sheep, or Bullocks, than three Acres of Turneps, and the Fleſh of theſe Animals will be firmer and better taſted. Horſes are extremely fond of theſe Roots, and for Hogs there is not any better Food. I have alſo known theſe Roots cultivated for feeding Deer in Parks, which has proved of excellent Uſe in hard Winters, when there has been a Scarcity of other Food; at which Times great Numbers of Deer have periſhed for Want; and thoſe which have eſcaped, have been ſo much reduced, as not to recover their Fleſh the following Summer; whereas thoſe fed with Carrots have been kept in good Condition all the Winter, and on the Growth of the Graſs in Spring, have been fat early in the Seaſon, which is an Advantage, where the Graſs is generally backward in its Growth.

There is alſo an Advantage in the Cultivation of this Root beyond that of the Turnep, becauſe the Crop is not ſo liable to fail; for as the Carrots are ſown in the Spring, the Plants generally come up well; and unleſs the Months of *June* and *July* prove very bad, there is no Danger of the Crop ſucceeding, whereas Turneps are frequently deſtroyed by the Flies at their firſt coming up; and in dry Autumns they are attacked by Caterpillars, which in a ſhort Time devour whole Fields, but Carrots are not attacked by theſe Vermin: Therefore every Farmer who has a Stock of Cattle or Sheep, ſhould always have a Supply of theſe Roots, if he has Land proper for the Purpoſe, which muſt be light and of a proper Depth to admit of the Roots running down.

In preparing Land for Carrots, if it has not been in Tillage before, it ſhould be ploughed early in Autumn, and then ploughed acroſs again before Winter, laying it up in high Ridges to mellow by the Froſt; and if the Ground is poor, there ſhould be ſome rotten Dung ſpread over it in Winter, which ſhould be ploughed in about the Beginning of *February*; then in *March*, it ſhould be ploughed again to receive the Seeds; in doing which, ſome Farmers uſe two Ploughs, one following the other in the ſame Furrow, ſo that the Ground is looſened a Foot and a Half deep: Others have Men with Spades following the Plough in the Furrows, turning up a Spit of Earth from the Bottom, which they lay upon the Top, leveling it ſmooth and breaking the Clods; the latter Method is attended with a little more Expence, but is much preferable to the firſt; becauſe in this Way the Clods are more broken, and the Surface is laid much evener.

If the Land has been in Tillage before, it will require but three Ploughings; the firſt juſt before Winter, when it ſhould be laid in high Ridges for the Reaſons before given; the ſecond croſs Ploughing ſhould be in *February*, after which, if it is well harrowed to break the Clods, it will be of great Service; the laſt Time muſt be in *March* to receive the Seeds; this ſhould be performed in the Manner before mentioned: After this third Ploughing, if there remain great Clods of Earth unbroken, it will be proper to harrow it well before the Seeds are ſown. One Pound and a Half of Seeds will be ſufficient for an Acre of Land, but as they are apt to adhere together, they are more difficult to ſow even, than moſt other Sorts; therefore ſome mix a Quantity of dry Sand with their Seeds, rubbing them well together, to ſeparate them from each other, which is a good Method. After the Seeds are ſown, they muſt be gently harrowed in to bury them; and when the Plants come up, they ſhould be hoed in the Manner before directed.

In order to preſerve your Carrots for Uſe all the Winter and Spring, you ſhould, about the Beginning of *November*, when the green Leaves are decayed, dig them up, and lay them in Sand in a dry Place, where the Froſt cannot come, taking them out from Time to Time as you have Occaſion, reſerving ſome of the longeſt and ſtraiteſt Roots for Seed, if you intend to ſave any; which Roots ſhould be planted in the Middle of *February*, in a light Soil about a Foot aſunder each Way, obſerving to keep the Ground clear from Weeds; and about the Middle of *Auguſt*, when you find the Seed is ripe, cut it off, and carry it to a dry Place, where it ſhould be expoſed to the Sun and Air for ſeveral Days to dry; then you may beat out the Seeds, and put it up in Bags, keeping it in a dry Place until you uſe it. This Seed is ſeldom eſteemed good after the 1ſt or 2d Year at moſt, but new Seed is always preferred, nor will it grow when more than two Years old.

The 3d Sort grows naturally about *Montpelier*; this hath ſmoother Stalks than the common Carrot, the Segments of the Leaves are broader, and of a lucid green; the Umbels of the Flowers are larger, and not ſo regular. This is an annual Plant, but it ſucceeds beſt when ſown in Autumn.

The 4th Sort is of lower Growth than either of the former; the Stalks are cloſely covered with ſhort Prickles, the Segments of the Leaves broad and obtuſe, the Umbels ſmall, the Involucrum longer than the Umbel, and the Leaves trifid which compoſe it.

The 5th Sort riſes with a ſlender rough hairy Stalk, upward of 2 Feet high; the Leaves are ſhort, and have a few ſmall ones which are thinly placed, and cut into acute Segments; the Umbels are not ſo large as thoſe of the common Sort, and the Involucrum is twice the Length of the Umbel; the Leaves which compoſe it are divided into 5 or 7 Parts, ending in acute Points; the Flowers are yellow.

The 6th Sort hath a channelled Stalk, riſing near 3 Feet high, which is terminated by ſmall Umbels of Flowers, with a Wing-pointed Involucrum; the lower Leaves are finely cut into ſmall obtuſe Segments, but thoſe upon the Stalks are cut into acute Segments; theſe Leaves are as ſmooth as thoſe of Parſley.

The 7th Sort is an annual Plant, which grows naturally in *Spain* and *Italy*; this riſes with an upright ſmooth channelled Stalk near 3 Feet high, garniſhed with ſmooth Leaves, divided into many fine narrow Segments like thoſe of Fennel; the Stalks branch out upward, and each Branch is terminated by a large Umbel, compoſed of a great Number of ſmall ones; the Involucrum is ſhorter than the Umbel, and each of the Leaves which compoſe it is trifid: The Foot Stalks which ſuſtain the ſmall Umbels (or Rays) are long and ſtiff; theſe are by the *Spaniards* uſed for picking their Teeth, from whence the Plant had the Title of *Viſnaga*, or Pick-tooth. The Seeds ſhould be ſown in Autumn, for thoſe ſown in Spring frequently fail, or remain in the Ground till next Year before they grow; the Plants require no Culture but to keep them clean from Weeds, and thin them where too cloſe.

Theſe Sorts are preſerved in Botanic Gardens only for Variety, being of no Uſe.

DAUCUS CRETICUS. *See* Athamanta.

D'AYENA. *Monier.*

This Genus of Plants receives its Title from the Duke *D'Ayen*, a great Lover and Promoter of the Science of Botany, who has a noble Garden at *St. Germains*, well ſtored with rare Plants from different Parts of the World, and has appointed Dr. *Monier*, the Superintendent of it.

The *Characters* are,

It hath male and hermaphrodite Flowers on the ſame Plant, ariſing on ſeparate Foot Stalks from the Wings of the Stalk at the ſame Place; the male Flower hath an Empalement of one Leaf, cut into 5 acute Segments; the Flower hath one Petal, with a ſlender Tube riſing above the Empalement, and ſpreads open above, where it is cut into 5 acute Parts, each being terminated by a ſlender Ligula; the male Flowers have 5 ſlender Stamina, terminated by obtuſe Stigmas; the hermaphrodite Flowers have alſo the ſame Number of Stamina, ſtanding round a 5 cornered Germen, ſupporting a ſlender Style, to which the Stamina coaleſce and form one Body; the Germen becomes a roundiſh 5 cornered Capſule, having 5 Cells, each having one Kidney-ſhaped Seed.

We know but one *Species* of this Genus, *viz.*

D'AYENA *inermis, foliis oblongo-cordatis, marginibus dentatis, floribus axillaribus.* Smooth *D'Ayena* with oblong Heart-ſhaped Leaves indented on their Edges, and Flowers growing from the Sides of the Stalks.

The Seeds of this Plant were ſent by the younger *De Juſſieu* from *Peru* to *Paris*, where they ſucceeded, and have ſince been communicated to other Gardens in *Europe*: I received the Seeds from Dr. *Monier*, Intendent of the Duke *D'Ayen*'s Garden at *St. Germains*, which have for ſome Years grown in the *Chelſea* Garden, where the Plants annually flower and perfect Seeds.

This Plant hath a weak ligneous Stalk, which divides into ſeveral ſlender Branches, riſing from 9 Inches to a Foot high; theſe are garniſhed by oblong Heart-ſhaped Leaves, ſlightly indented on their Edges, ſtanding upon pretty long Foot Stalks; they are of a lucid green, end in acute Points, and are placed alternately on the Branches. At the Baſe of each Foot Stalk, from the Side of the Branches, come out the Flowers, 2, 3, or 4, ariſing from the ſame Point, each ſtanding upon a ſeparate ſlender Foot Stalk; ſome of theſe are male, which have generally ſhorter Foot Stalks than the hermaphrodite Flowers, and have 5 ſlender Stamina, but no Germen. The hermaphrodite Flowers have their Stamina and Style collected into a Sort of Column, like the malvaceous Flowers, having a 5 cornered Germen at the Bottom, which becomes a roundiſh 5 cornered Capſule, having 5 Cells, in each of theſe is lodged one Kidney-ſhaped Seed. The Flowers are tubulous, ſpreading open at the Top, where they are cut into 5 acute Segments, each being terminated by a ſlender Tail; they are purple, and continue in Succeſſion on the ſame Plants, from *July* till the Winter.

This Plant is propagated by Seeds, which ſhould be ſown upon a moderate hot Bed early in Spring; and when the Plants come up, and have four Leaves, they ſhould be tranſplanted on a freſh hot Bed to bring them forward; Part of them may be planted in ſmall Pots, and the others may be planted on the Bed: Thoſe in the Pots ſhould be plunged into a hot Bed of Tanners Bark; they muſt be ſhaded till they have taken new Root, then free Air admitted to them every Day, in Proportion to the Warmth of the Seaſon; they require to be frequently watered in warm Weather, but ſhould not have it in too great Plenty. The Plants ſhould continue all the Summer in the hot Bed, where they muſt have a good Share of Air; for thoſe which are fully expoſed to the open Air will not thrive; and if they are too much drawn, they do not flower well. The Plants will live through the Winter in a moderate Stove, but as they perfect Seeds well the firſt Year, few Perſons continue the old Plants. There is a Figure of this Plant exhibited in the 118th Plate of our Figures of Plants.

DAY-LILY. *See* Hemerocallis.

DELPHINIUM. *Lin. Gen. Plant.* 602. *Tourn. Inſt. R. H* 426. Larkſpur, or Larkſheel.

The *Characters* are,

The Flower hath no Empalement; it is compoſed of five unequal Petals placed circularly, the upper Petal is extended at the hinder Part into a tubular obtuſe Tail; the two Side Petals are nearly of the ſame Size with the upper, but the two lower are ſmaller; theſe ſpread open. There is a bifid Nectarium ſituated in the Center of the Petals, and is involved in the Tube by the back Part. The Flower hath many ſmall Stamina which incline to the Petals, and are terminated by ſmall erect Summits; it hath 3 oval Germina, ſupporting 3 Styles which are as long as the Stamina, crowned by reflexed Stigmas; the Germina, afterward become ſo many Capſules joined together, which open Croſsways, each having one Cell filled with angular Seeds.

The *Species* are,

1. Delphinium *ſegetum. Tourn. Inſt.* 426. Corn Larkſpur, and the *Conſolida regalis arvenſis. C. B. P.* 142. Field Royal Conſound.

2. Delphinium *hortenſe, flore majore & ſimplici cæruleo. Tourn. Inſt. R. H.* 426. Garden Larkſpur with a larger ſingle blue Flower, commonly called branching Larkſpur.

3. Delphinium *nectariis monophyllis, caule ſimplici. Hort. Cliff.* Larkſpur with a one leaved Nectarium and a ſingle Stalk. This is the *Delphinium elatius purpuro-violaceum. Swert.* Upright or unbranched Larkſpur.

4. Delphinium *latifolium, parvo flore. Tourn. Inſt. R. H.* 426. Broad leaved Larkſpur with a ſmall Flower.

5. Delphinium *perenne montanum villoſum, aconiti folio. Tourn. Inſt.* 426. Perennial hairy Mountain Larkſpur with a Monkſhood Leaf, commonly called the Bee Larkſpur.

6. Delphinium *humilius anguſtifolium perenne, flore azureo. Amman.* Dwarf narrow leaved perennial Larkſpur, with an azure Flower.

7. Delphinium *nectariis diphyllis, labellis integris, floribus ſpicatis, foliis palmatis multifidis glabris. Plate* 119. of the Figures of Plants. Larkſpur with a two leaved Nectarium, an entire Lip, Flowers growing in Spikes, and palmated multifid ſmooth Leaves, commonly called *Siberian* Larkſpur.

8. Delphinium *villoſum, nectariis diphyllis, labellis bifidis, foliis palmatis multifidis.* Woolly Larkſpur with a two leaved Nectarium, a bifid Lip, and palmated multifid Leaves.

9. Delphinium *caule erecto ſimplici, foliis quinquelobatis, inciſis, glabris.* Larkſpur with a ſingle upright Stalk, and ſmooth cut Leaves having 5 Lobes. This is the *Delphinium Luſitanicum glabrum, aconiti folio. Tourn.* Smooth *Portugal* Larkſpur, with a Monkſhood Leaf.

10. Delphinium *nectariis diphyllis, capſulis triplicibus, foliis multifidis inciſis acutis, caule ſimplici. Gmel.* Larkſpur with a two leaved Nectarium, a tripple Seed Veſſel, multifid, acute, cut Leaves, and a ſingle Stalk.

11. Delphinium *nectariis diphyllis, foliis palmatis, lobis integris. Hort. Cliff.* 213. Larkſpur with a two leaved Empalement, and palmated Leaves having entire Lobes. This is the *Delphinium platani folio, ſtaphyſagria dictum. Tourn. Inſt. R. H.* 428. Larkſpur with a Plane Tree Leaf called Staveſacre.

The ſeveral Varieties of the Garden Larkſpur are not here enumerated, as they would ſwell the Work beyond its intended Bulk, if all theſe were diſtinguiſhed, ſo here are only the diſtinct Species mentioned, and as the Gardeners diſtinguiſh the Garden Larkſpurs into thoſe which are branched, and ſuch as have upright Stalks, which Difference is permanent, and never alters, whatever may be aſſerted to the contrary by ignorant Pretenders; ſo I ſhall juſt mention the ſeveral Varieties which there are of each Sort, commonly cultivated in the Gardens of the Curious. And firſt of the branched Larkſpur, there are of the following Colours, with ſingle and double Flowers.

Blue, purple, white, Fleſh, Aſh, and Roſe Colours; and ſome have Flowers beautifully ſpotted, with two or three of theſe different Colours.

The upright or unbranched Larkſpur, produces a greater Variety of Colours than the branched, and the Flowers are larger and fuller than thoſe; but the principal Colours run nearly the ſame with thoſe of the other, though many of the Colours are deeper, and there are more different Shades of theſe Colours in the Flowers of this Sort.

The 1ſt Sort grows naturally on arable Lands, in *France*, *Spain*, and *Italy*, and is ſuppoſed to be the ſame as the Garden Larkſpur, which is a great Miſtake, for I have cultivated it many Years in the Garden, and never found it alter: The Leaves of this are broader, and not ſo much divided as thoſe of the Garden Kind, and placed thinner upon the Stalks; the Flowers are ſmaller, and grow in longer Spikes; the Stalks are not ſo much branched as that Sort which is called the branched, nor are they ſingle like the upright, ſo I think it may be allowed to be a different Species.

The branching Larkſpur, which is the 2d Sort, comes later to flower than the upright; this riſes with a very branching Stalk 3 Feet high or more, the Branches come out horizontally from the Side of the Stalks, but afterward turn that Part on which the Spike of Flowers grow, which is at the Extremity upward, ſo as to make an Angle; the Leaves are long and finely divided; the Flowers are placed thinner in the Spikes than thoſe of the upright Sort; they are large, and ſome of them very double and of various Colours.

The 3d Sort hath upright Stalks, which ſcarce put out any Branches; the Spikes of Flowers grow erect, and the Flowers are placed very cloſe together, ſo that they make a fine Appearance. Theſe Plants flower in *July* and *Auguſt*, and are very great Ornaments to the Borders of the Flower Garden.

Theſe Plants are annual, ſo are every Year propagated by Seeds; theſe ſhould be ſown where the Plants are deſigned to remain, for they do not bear tranſplanting well, eſpecially if they are not removed very young; thoſe

Seeds which are ſown in Autumn, produce the ſtrongeſt Plants and moſt double Flowers, and ripen their Seeds better than thoſe ſown in Spring, as they come earlier to flower; but to continue a Succeſſion of theſe Flowers, there ſhould be ſome Seeds ſown in Spring. Where they are ſown on the Borders of the Flower Garden for Ornament, they ſhould be in Patches of about a Foot Diameter, in the Middle of the Borders, at proper Diſtances; in each of theſe Patches may be ſcattered ten or a dozen Seeds, covering them over about a Quarter of an Inch with Earth; and in Spring, the Plants may be thinned, leaving about 5 or 6 of the upright Sort in each Patch to ſtand for flowering; but of the branching Sort, not more than 3 or 4, becauſe theſe require Room; after this the Plants will require no farther Care but to keep them clean from Weeds, and when they begin to flower ſhould be ſupported by Flower Sticks to prevent their being broken by Wind. If the Seeds were well choſen, there will be very few ordinary Flowers among them; and if the Seeds of different coloured Flowers are ſown in each Patch, they will make a pleaſing Variety: But the upright Sort ſhould never be mixed in the ſame Patches with the branching, becauſe they do not flower at the ſame Time.

In order to preſerve the two Sorts fine without degenerating to ſingle or bad Colours, there ſhould be a Bed of each Sort ſown in Autumn, in ſome ſeparate Part of the Garden, where the Plants ſhould be properly thinned, and kept clean from Weeds, till they begin to ſhew their Flowers, when they ſhould be carefully looked over every other Day, to pull up all thoſe Plants, whoſe Flowers are not very double nor of good Colours; for if theſe are permitted to ſtand among the others till their Farina has impregnated them, it will certainly cauſe them to degenerate; ſo that thoſe Perſons who are contented with only marking their good Flowers for Seed, and ſuffer the others to ſtand for Seed among them, will always find themſelves diſappointed in the Goodneſs of their Flowers the following Seaſon: Therefore thoſe who deſire to have theſe Flowers in Perfection, ſhould never gather the Seeds of ſuch as grew in the Borders of the Flower Garden; becauſe there it will be almoſt impoſſible to preſerve them ſo true, as when they are in Beds at a Diſtance from all other Kinds.

When the Seed Veſſels turn brown, they muſt be carefully watched, to gather them before they open and diſcharge the Seeds; ſo that thoſe which are ſituated on the lower Part of the Stalk, will open long before thoſe on the upper Part of the Stalk are ripe, for which Reaſon the Pods ſhould from Time to Time be gathered as they ripen, and not ſuffered to ſtand till the Stalks are pulled up, which is often practiſed. Thoſe Pods which are ſituated on the lower Part of the Stalks, are much preferable to ſuch as grow near the Top; for which Reaſon thoſe who are very curious in the Choice of their Seeds, crop off the upper Part of the Spikes of Flowers, and never ſuffer them to ſtand for Seeds.

As theſe Plants are very hardy, and require ſo little Care in their Culture, they are worthy of a Place in every good Garden; for during their Continuance in flower, there are few Plants which make a better Appearance; and for gathering to adorn Rooms, there is ſcarce any Flower ſo proper; becauſe by their upright Growth and long Spikes, they riſe to a proper Height, and when the ſeveral Colours are ſkilfully intermixed they make a rich Appearance, and continue long in Beauty.

The 4th Sort grows naturally in *Sicily* and *Spain*, I received the Seeds from *Gibraltar*; this hath a very branching Stalk, which riſes about 2 Feet high; the lower Leaves are divided into many broad obtuſe Segments, but thoſe on the Stalks are generally ſingle; the Flowers grow ſcatteringly toward the upper Part of the Branches, they are ſmall and of a deep blue Colour; theſe are ſucceeded by very ſmall Seed Veſſels, ſometimes ſingle, at others double, and very rarely 3 together, as in the common Sorts. This is an annual, whoſe Seeds ſhould be ſown in Autumn, and the Plants treated as the common Sort; having little Beauty, it is only kept in ſome Gardens for Variety.

The 5th Sort hath a perennial Root, which ſends out ſeveral upright Stalks in Spring, 4 Feet high; theſe are garniſhed with Leaves divided into many broad Segments, in Form of a ſpreading Hand; theſe Segments are cut at their Extremities into 2 or 3 acute Points; the Leaves are hairy, and ſtand on long Foot Stalks; the Flowers terminate the Stalks, growing in long Spikes; they are of a light blue, covered toward their hinder Part with a mealy Down. This flowers in *July* and *Auguſt*, and in Autumn the Stalks decay to the Root.

The 6th Sort grows naturally in *Siberia*, from whence the Seeds were ſent to the Imperial Garden at *Peterſburgh*, where they ſucceeded; and the Seeds were ſent me from thence, by the late Dr. *Amman*; this hath a perennial Root, which puts out 2 or 3 branching Stalks every Spring; theſe riſe about a Foot and a Half high, and are garniſhed at each Joint with Leaves compoſed of many narrow Segments, which terminate with ſeveral acute Points; they are ſmooth, and of a light green Colour; the Flowers come out toward the upper Part of the Stalks ſingly, each ſtanding upon a long naked Foot Stalk; theſe are large, and of a fine azure Colour; they appear the latter Part of *July*, but are not often ſucceeded by Seeds in this Country.

The 7th Sort grows naturally in *Siberia*, the Seeds of it were ſent me from *Peterſburgh*; this is a perennial Plant, which riſes with many ſtrong branching Stalks, 6 or 7 Feet high; the upper Part of theſe Stalks are of a fine purple Colour; theſe are garniſhed with Handſhaped Leaves, which are divided into 4 or 5 broad Lobes, ending with many acute Points; theſe are ſmooth, and ſtand upon long Foot Stalks; the Flowers terminate the Stalks, growing in long Spikes; they are of a fine blue Colour, with a large bearded Nectarium, having two Lips, and of a dark Colour, reſembling at a ſmall Diſtance the Body of a Bee, from whence ſome have titled this and the 5th Sort, Bee Larkſpur.

The 8th Sort grows alſo in *Siberia*; this is perennial, and greatly reſembles the 7th, but the Segments of the Leaves are broader and not ſo long; the Flowers much ſmaller, and of a paler blue; the Leaves are woolly, and the Stalks do not grow ſo tall; theſe Differences are conſtant in the Plants raiſed from Seed.

The 9th Sort grows naturally in *Portugal*, from whence I received the Seeds; this riſes with an upright unbranched Stalk about 3 Feet high, garniſhed with ſmooth Leaves divided into 5 obtuſe Lobes; theſe are cut on their Edges into obtuſe Segments. The Flowers are produced in ſhort Spikes at the Extremity of the Stalk; they are of a fine bright blue, and do not expand ſo broad as thoſe of the former Sorts, the Petals cloſely ſhutting up the bearded Nectarium. This flowers in *July* and *Auguſt*.

The 10th Sort grows naturally in *Tartary*; the Seeds were ſent to the Imperial Garden at *Peterſburgh*, from whence I received them; this hath a perennial Root, from which come out many compound Leaves, ſtanding circularly round the Foot Stalk; theſe are divided into 6 or 7 Lobes, which are cut into 5 acute Points: They ſtand on long hairy Foot Stalks; between theſe ariſe the Stalks which are ſingle, and naked at the Bottom; they riſe a Foot and a Half high, and are garniſhed near a Foot in Length with Flowers, which ſit cloſe to the Stalks; they are of a pale yellow Colour, and the Nectarium is compoſed of 2 Leaves. This flowers in *July*, and the Seeds ripen in Autumn.

All theſe perennial Larkſpurs are propagated by Seeds, which, if ſown in Autumn, will more certainly ſucceed than thoſe ſown in Spring; when the Plants come up, they ſhould be kept clean from Weeds, and where too cloſe together, Part of them drawn out, to allow Room for the others to grow till the following Autumn, when they muſt be planted where they are to remain; the following Summer they will flower, and the Roots contitinue many Years, growing in Magnitude, ſo will produce a greater Number of Flower Stalks.

The 11th Sort is annual, and grows naturally in the *Levant*, alſo in *Calabria*; this riſes with a ſtrong hairy Stalk about 2 Feet high, garniſhed with Hand-ſhaped hairy Leaves, compoſed of 5 or 7 oblong Lobes, which have frequently one or two acute Indentures on their Sides; the Flowers form a looſe Spike at the upper Part of the Stalk, each ſtanding on a long Foot Stalk; the Flowers are of a pale blue or purple Colour, and have a two leaved Nectarium: This is propagated by Seeds, which ſhould be ſown in Autumn, for thoſe ſown in Spring never grow the ſame Year. The Seeds ſhould be ſown where the Plants are to remain, and require no other Treatment than the common Larkſpur. The common People uſe the Powder of this Seed to kill Lice, from whence it has been titled Louſewort.

DENS CANIS. *See* Erythronium.

DENS LEONIS. *See* Leontodon.

DENTARIA. *Lin. Gen. Plant.* 726. *Tourn. Inſt. R. H.* 225. *Tab.* 110. Toothwort, in *French Dentaire.*

The *Characters* are,

The Empalement of the Flower is compoſed of 4 oblong oval Leaves, which fall off; the Flower hath 4 obtuſe Petals placed in Form of a Croſs; it hath 6 Stamina, 4 of which are as long as the Empalement, the other 2 are ſhorter; theſe are terminated by oblong Heart-ſhaped Summits, which ſtand erect. In the Center is ſituated an oblong Germen, ſupporting a ſhort thick Style crowned by an obtuſe Stigma; the Germen becomes a long taper Pod with 2 Cells, divided by an intermediate Partition, opening with 2 Valves, including many roundiſh Seeds.

The *Species* are,

1. DENTARIA *foliis quinatis, foliolis acuminatis ſerratis.* Five leaved Toothwort, whoſe ſmaller Leaves are pointed and ſawed on their Edges. This is the *Dentaria pentaphyllos, foliis mollioribus. C. B. P.* 322. Five leaved Toothwort with ſoft Leaves.

2. DENTARIA *foliis inferioribus pinnatis, ſummis ſimplicibus. Hort. Cliff.* 335. Toothwort with lower Leaves winged, and the upper ones ſingle. This is the *Dentaria heptaphyllos baccifera. C. B. P.* 322. Seven leaved Berry-bearing Toothwort.

3. DENTARIA *foliis ternis ternatis. Lin. Sp. Plant.* 653. Toothwort with three leaved trifoliate Leaves.

4. DENTARIA *foliis ſummis digitatis. Lin. Sp. Plant.* 654. Toothwort whoſe upper Leaves are digitated. This is the *Dentaria pentaphyllos foliis aſperis. C. B. P.* 322. Five leaved Toothwort with rough Leaves.

The firſt riſes with a ſtrong Stalk a Foot and a Half high, garniſhed with a Leaf at each Joint, compoſed of 5 Lobes, which are 4 Inches long, and near 2 broad in the wideſt Part, ending in acute Points, and deeply ſawed on their Edges; theſe are ſmooth, and ſtand on long Foot Stalks; the Flowers grow in looſe Spikes at the Top of the Stalks; they are ſmall, of a bluſh Colour, and ſucceeded by long taper Pods filled with ſmall roundiſh Seeds. It grows in the ſhady Woods in the South of *France* and *Italy*.

The 2d Sort riſes with ſlender Stalks about a Foot high; the Leaves at the Bottom have 7 Lobes, thoſe a little above 5, others but 3, and at the upper Part of the Stalk they are ſingle: The Flowers grow in Cluſters at the Top of the Stalk, theſe have 4 obtuſe purple Petals, and are ſucceeded by taper Pods filled with roundiſh Seeds.

The 3d Sort riſes with an upright Stalk a Foot high; the Leaves are compoſed of 9 Lobes, 3 growing together, ſo that one Leaf has three Times three; the Flowers grow in ſmall Bunches on the Top of the Stalks, and are ſucceeded by ſmall taper Pods filled with roundiſh Seeds.

The 4th Sort riſes a Foot and a Half high; the lower Leaves are compoſed of 7 Lobes, and thoſe on the upper Part of the Stalk have 5, they are rough and hairy: The Flowers grow in looſe Spikes on the Top of the Stalks; they are white, and are ſucceeded by taper Pods like the other Sorts.

Theſe Plants grow on the Mountains in *Italy*, and in the Woods of *Auſtria*. The 2d Sort is found wild in *England*, particularly near *Harefield*, in moiſt ſhady Woods, and is ſeldom preſerved in Gardens: This produces Bulbs on the Side of the Stalks, where the Leaves are ſet on, which, if planted, will grow and produce Plants. Theſe Plants are propagated by Seeds, or parting their Roots; the Seeds ſhould be ſown in Autumn, ſoon after they are ripe, in a light ſandy Soil, and a ſhady Situation: In the Spring the Plants may be taken up where they grow too cloſe, and tranſplanted out in the like Soil and Situation; where, after they have taken Root, they will require no farther Care, but to keep them clear from Weeds: The ſecond Year they will produce Flowers, and ſometimes perfect their Seeds.

The beſt Time to tranſplant the Roots is in *October*, they ſhould have a moiſt Soil, and ſhady Situation; for they will not live when expoſed to the Sun.

DEW is by ſome defined to be a Meteor bred of a thin cold Vapour, or compoſed of the Steams and Vapour pours of the Earth; which, being exhaled by the Heat of the Sun, and kept ſuſpended during his Preſence, do, upon his Abſence, convene into Drops, and then fall down to the Earth again.

Others define it, a thin, light, inſenſible Miſt or Rain, falling while the Sun is below the Horizon.

The Origin and Matter of Dews are, without Doubt, from Vapour and Exhalations of the Earth and Water, raiſed by the Warmth of the Earth, *&c.*

There being many Vapours in the Air, though not always viſible, hence it comes to paſs, that even in clear Weather great Dews fall, eſpecially in Countries where it ſeldom rains; for when it happens that the ſcattered Vapours are collected and condenſed together, and forced downwards, they muſt needs fall, and bedew the Plants and Graſs.

The thin Veſicles, of which Vapours conſiſt, being once detatched from their Bodies, keep riſing in the Air till they arrive at ſuch a Stage as is of the ſame ſpecifick Gravity with themſelves, when their Riſe is ſtopped: Now, as it is the Warmth or Fire that dilates the Parts of Water, and forms thoſe Veſicles that are ſpecifically lighter than the Air, and are capable of aſcending therein; ſo when that Heat declines, or is loſt, as by the Approach or Contiguity of any colder Body, the Veſicles condenſe, and become heavier and deſcend.

The Difference between Dew and Rain ſeems to be only this, That Dew falls at ſome particular Times as aforeſaid, and in very ſmall Drops, ſo as to be ſeen when down, but ſcarce perceivable while it is falling; whereas Rain falls at any Time, and in groſſer Drops.

The Rev. Dr. *Hales*, in his Treatiſe of *Vegetable Staticks*, tells us, That in order to find out the Quantity of Dew that fell in the Night on the 15th of *Auguſt*, 7. *p. m.* he took two glazed Earthen Pans, which were three Inches deep, and twelve Inches Diameter in Surface: that he filled them with pretty moiſt Earth, taken from off the Surface of the Ground, and they increaſed in Weight by the Night's Dew 180 Grains; and decreaſed in Weight by the Evaporation of the Day 1 Ounce + 282 Grains.

He ſays likewiſe, he ſet theſe in other broader Pans to prevent any Moiſture from the Earth ſticking to the Bottom of them. He adds, that the moiſter the Earth is, the more Dew falls on it in a Night, and more than a double Quantity of Dew falls on a Surface of Water than there does on an equal Surface of moiſt Earth: The Evaporation of a Surface of Water in nine Hours Winter's dry Day, is $\frac{1}{21}$ of an Inch: The Evaporation of a Surface of Ice ſet in the Shade during a nine Hours Day, was $\frac{1}{31}$.

So here are 540 Grains more evaporated from the Earth every 24 Hours in Summer than fall in Dew in the Night; that is in 21 Days near 26 Ounces from a circular Area of a Foot Diameter; and Circles being as the Squares of their Diameters, 10 Pounds + 2 Ounces will in 21 Days be evaporated from the Hemiſphere of 30 Inches Diameter, which the Sunflower's Root occupies; which, with the 29 Pounds drawn off by the Plant in the ſame Time, makes 39 Pounds, that is 9 Pounds and $\frac{3}{4}$ out of every cubick Foot of Earth, the Plant's Roots occupying more than 4 cubick Feet: But this is a much greater Degree of Drineſs than the Surface of the Earth ever ſuffers for 15 Inches Depth, even in the drieſt Seaſons in this Country.

DIANTHERA. *Lin. Gen. Plant.* 37. *Flor. Virg.* 6.

The *Characters* are,

The Flower hath a permanent Empalement of one Leaf, which is tubulous, and cut at the Top into 5 *equal Parts; the Flower is of the grinning Kind, having one Petal with a ſhort Tube; the upper Lip is reflexed and bifid, the lower is divided into* 3 *Parts, the Middle being the broadeſt; it hath* 2 *ſhort ſlender Stamina, adhering to the back of the Petal, one of theſe hath a twin Summit, the other is a little taller. It hath an oblong Germen ſupporting a ſlender Style the Length of the Stamina, crowned by an obtuſe Stigma. The Empalement afterward becomes a Capſule with* 2 *Cells, opening with* 2 *Valves, which are alternately compreſſed at the Top and Bottom, and open with an Elaſticity, caſting a ſingle flat Seed out of each Cell.*

We know of but one *Species* of this Genus, *viz.*

DIANTHERA. We have no *Engliſh* Title for it.

This Plant grows naturally in *Virginia*, and other Parts of *North America*, from whence the Seeds have been ſent to *England*, where they have ſucceeded. This is a low herbaceous Plant with a perennial Root, which ſends out ſeveral weak Stalks about 4 Inches long, garniſhed with roundiſh Leaves of an aromatick Odour, ſtanding cloſe to the Stalks; they are hairy and of a dark green Colour; from the Side of the Stalks the Flowers are produced, in ſmall Cluſters, theſe are in Shape and Colour very like thoſe of the *Clinopodium*, but have only two Stamina in each. It flowers the latter End of *July*, but rarely produces Seeds in *England.*

This Plant is very difficult to preſerve in this Country, for although it is hardy enough to live in the open Air in *England*, yet it is very ſubject to rot in Winter, and if it is placed under Shelter, it is apt to draw up weak, and ſoon after decay, ſo is very rare here.

DIANTHUS. *Lin. G. P.* 500. *Caryophyllus. Tourn.* Clove Gilly Flower, *Carnation* Pink, in French *Oeillet.*

The *Characters* are,

The Flower hath a long cylindrical Empalement which is permanent; it hath 5 *Petals, whoſe Tails are as long as the Empalement, but their upper Part is broad, plain, and crenated on their Borders, theſe are inſerted in the Bottom of the Tube, and ſpread open above. It hath* 10 *Stamina as long as the Empalement, terminated by oblong compreſſed Summits. In the Center is ſituated an oval Germen, ſupporting* 2 *Styles which are longer than the Stamina, crowned by recurved Stigmas: The Germen afterward becomes a cylindrical Capſule with one Cell, opening in* 4 *Parts at the Top, and filled with compreſſed angular Seeds.*

The *Species* are,

1. DIANTHUS *floribus ſolitariis, ſquamis calycinis lanceolatis binis, corollis crenatis. Hort. Cliff.* 164. *Dianthus* with a ſingle Flower, having a double ſcaly Empalement and crenated Petals. This is the *Caryophyllus ſylveſtris vulgaris anguſtifolius. C. B. P.* 209. Common narrow leaved wild Pink.

2. DIANTHUS *caule ſubunifloro, corollis crenatis, ſquamis calycinis breviſſimis, foliis ſubulatis. Lin. Sp. Pl.* 412. *Dianthus*, with one Flower on a Stalk, crenated Petals, very ſhort Scales to the Empalement, and Awl-ſhaped

Leaves. This is the *Caryophillus minor repens. Raii Syn.* 335. *Engliſh*, ſmall creeping or Maiden Pink, commonly called the matted Pink by Seedſmen.

3. DIANTHUS *floribus ſubſolitariis, ſquamis calycinis lanceolatis quaternis, corollis crenatis. Hort. Cliff.* 164. *Dianthus* with one Flower on a Stalk, having four Spear-ſhaped Scales to the Empalement, and crenated Petals. This is the *Tunica ramoſior flore candido cum corollâ purpureâ, Hort. Elth.* 400. Branching Pink, with a white Flower, having a purple Circle, called Mountain Pink.

4. DIANTHUS *floribus ſolitariis, ſquamis calycinis ſubovatis breviſſimis, corollis multifidis fauce pubeſcentibus. Lin. Sp. Plant.* 411. *Dianthus* with a ſingle Flower, having ſhort oval Scales to the Empalement, and Petals cut into many Points, with a hairy Bottom. This is the *Caryophyllus ſimplex flore minore pallido rubente. C. B. P.* Single wild Pink, with a ſmall pale reddiſh Flower.

5. DIANTHUS *floribus ſolitariis ſquamis calycinis ſubovatis breviſſimis, corollis crenatis. Hort. Cliff.* 164. *Dianthus* with a ſingle Flower, having ſhort oval Scales to the Empalement, and crenated Petals. This is the *Caryophyllus hortenſis ſimplex, flore majore. C. B. P.* 208. Single Garden Carnation with a large Flower.

6. DIANTHUS *floribus aggregatis faſciculatis, ſquamis calycinis lanceolatis villoſis tubum æquantibus. Hort. Cliff.* *Dianthus* with many Flowers gathered into Bunches, having hairy Spear-ſhaped Scales to the Empalement, as long as the Tube of the Flower. *Caryophyllus barbatus ſylveſtris.* Bearded wild Pink, called *Deptford* Pink.

7. DIANTHUS *floribus aggregatis faſciculatis, ſquamis calycinis linearibus, foliis lanceolatis. Dianthus* with many Flowers gathered in Bunches, having very narrow Scales to the Empalement, and Spear-ſhaped Leaves. This is the *Caryophyllus barbatus hortenſis latifolius. C. B. P.* 208. Broad leaved Garden Sweet William.

8. DIANTHUS *floribus aggregatis capitatis, ſquamis calycinis ovatis obtuſis muticis tubum ſuperantibus. Lin. Sp. Plant.* 410. *Dianthus* with Flowers collected in Heads, and obtuſe, oval, chaffy Scales to the Empalements, which are longer than the Tube. This is the *Caryophillus ſylveſtris prolifer.* Wild childing Sweet William.

9 DIANTHUS *floribus aggregatis capitatis ſquamis calycinis lanceolatis ariſtatis, corollis crenatis. Dianthus* with Flowers collected in Heads, having Spear-ſhaped Scales to the Empalement which are bearded, and crenated Petals. This is the *Caryophyllus montanus umbellatus, floribus variis luteis ferrugineis Italicus, Barrel. obſ.* 648. *Italian* umbellated Mountain Pink with Flowers varying from yellow to an Iron Colour.

10. DIANTHUS *floribus ſolitariis, ſquamis calycinis ſubulatis patulis, tubum æquantibus, corollis crenatis. Hort. Cliff. Dianthus* with a ſingle Flower on each Stalk, Awl-ſhaped ſpreading Scales to the Empalement equalling the Tube, and crenated Petals. *Caryophyllus ſinenſis ſupinus, leucoii folio, flore unico. Tourn.* The *China* Pink.

11. DIANTHUS *caulibus unifloris ſquamis calycinis ovatis, corollis multifidis, foliis linearibus. Flor. Suec.* 318. *Dianthus* having a ſingle Flower upon a Stalk, oval Scales to the Empalement, the Petals cut into many Points, and narrow Leaves *Caryophyllus ſylveſtris humilis, flore unico.* Dwarf wild Pink with one Flower.

12. DIANTHUS *caule unifloro, corollis crenatis, ſquamis calycinis exterioribus tubum æquantibus, foliis linearibus obtuſis. Lin. Sp. Pl.* 412. *Dianthus* with one Flower having crenated Petals, the outer Scales of the Empalement equalling the Tube, and narrow obtuſe Leaves. *Caryophyllus pumilus latifolius.* Dwarf broad leaved Pink.

The 1ſt Sort hath a ſhort ligneous Stalk, from which come out ſeveral tufted Heads cloſely garniſhed with long narrow Leaves, whoſe Baſe lie over each other embracing the Stalks; between theſe ariſe the Flower Stalks about 9 Inches high, garniſhed at every Joint by 2 narrow graſſy Leaves placed oppoſite. The Stalks are terminated by a ſingle pale red Flower in *June* and *July*, and the Seeds ripen in Autumn. This is rarely admitted into Gardens, having no Beauty.

The 2d Sort is a low trailing Plant, whoſe Stalks lie on the Ground; theſe grow very cloſe together and are garniſhed with ſhort, narrow, graſſy Leaves of a deep green; the Stalks are terminated by ſmall red Flowers, each ſtanding upon a ſeparate Foot Stalk. It flowers in *July*, and the Seeds ripen in *September*. This Sort grows naturally in ſeveral Parts of *England*, ſo is not often cultivated in Gardens at preſent, but formerly the Seeds were ſown to make Edgings for the Borders of the Flower Garden by the Title of matted Pink.

The 3d Sort grows naturally upon *Chidder* Rocks in *Somerſetſhire*, and ſome other Parts of *England*; this was formerly cultivated in the Gardens, by the Title of Mountain Pink. It hath a Reſemblance of the 2d Sort, but the Leaves are ſhorter and of a grayiſh Colour; the Stalks grow taller and branch more; the Flowers are larger, of a white Colour with a purple Circle in the Bottom, like that Sort of Pink called Pheaſant's Eye. As the Flowers of this Sort have no Scent, the Plants are ſeldom kept in Gardens.

The 4th Sort grows naturally in ſeveral Parts of *England*, frequently upon old Walls; it is a ſmall ſingle Pink of a pale red Colour, ſo is not cultivated in Gardens.

The 5th Sort is a ſmall ſingle Carnation, which has been long caſt out of all the Gardens; from one of this Sort it is ſuppoſed many of the fine Flowers now cultivated in the Gardens have been raiſed.

The 6th Sort grows naturally in ſeveral Parts of *England*, particularly in a Meadow near *Deptford* in *Kent*; from whence it had the Title of *Deptford* Pink. This is of the Kind called Sweet William; the Flowers grow in cloſe Cluſters at the End of the Branches, they are red, and have long bearded Empalements. I have cultivated this Sort 40 Years, and never found it vary.

The 7th Sort is the common Sweet William, which has been long cultivated in Gardens for Ornament, of which there are now great Varieties which differ in the Form and Colour of their Flowers, as alſo in the Size and Shape of their Leaves; thoſe which have narrow Leaves were formerly titled Sweet Johns by the Gardeners, and thoſe with broad Leaves were called Sweet Williams; there are ſome of both theſe Sorts with double Flowers, which are very ornamental Plants.

The 8th Sort grows naturally in *France Spain* and *Italy*; this is annual, and riſes with an upright Stalk a Foot high, garniſhed with narrow graſſy Leaves, and is terminated by a ſmall Head of pale red Flowers, included in one common ſcaly Empalement. Theſe have little Beauty, ſo the Plants are ſeldom kept in Gardens.

The 9th Sort is a perennial Plant which riſes with an upright Stalk a Foot and Half high, having 2 long narrow Leaves placed oppoſite at each Joint, which embrace the Stalk with their Baſe, they are of a deep green Colour, ſtiff, and end in acute Points. The Flowers grow in cloſe Cluſters at the Top of the Stalks, having ſtiff bearded Empalements; they are yellow and Iron coloured, intermixed on the ſame Stalk, and frequently there are of both Colours in the ſame Head. This Plant flowers in *July*, and the Seeds ripen in Autumn; but the Roots will continue ſeveral Years, and annually flower and ſeed; but the young Plants of the ſecond Year always produce the ſtrongeſt Flowers.

The 10th Sort came originally from *China*, ſo is titled the *China* Pink; the Flowers have no Scent, but have a great Variety of lively Colours; of late Years, the double Flowers of this Sort have been greatly improved, ſome of them are as full of Petals as the double Pink, and their Colours very rich. The Plants ſeldom grow more than 8 or 9 Inches high, branching out on every Side; the Branches grow erect, and are terminated each by a ſingle Flower. They flower in *July*, and continue in Succeſſion till the Froſt ſtops them; they are raiſed every Year from Seeds, but the Roots will continue two Years in dry Ground.

The 11th Sort is found growing naturally on old Walls and Buildings in many Parts of *England*; this is a ſingle ſmall Pink of a ſweet Odour, but of a pale Colour and ſmall, ſo makes no Appearance, and ſince the great Improvement which has been made in theſe Flowers by Culture, this has been entirely neglected.

The 12th Sort grows naturally on the *Alps*; this hath broad, ſhort, blunt Leaves; the Stalks ſeldom riſe more than 4 Inches high, each being terminated by a ſingle Flower of a pale red Colour. It is is ſometimes preſerved in Botanick Gardens for the Sake of Variety, but is rarely admitted into other Gardens.

The Sorts here enumerated, are ſuch as the Botaniſts allow to be diſtinct Species, and all the Varieties of fine Flowers, now cultivated in the Gardens of the Curious, are only accidental Variations which have been produced by Culture; the Number of theſe are greatly increaſed annually, in different Parts of *Europe*, ſo that as new Varieties are obtained, the old Flowers are rejected.

The Plants of this Genus may be properly enough divided into 3 Sections. The 1ſt to include all the Variety of Pinks, the 2d all the Carnations, and the 3d, thoſe of the Sweet William, for although theſe agree ſo nearly in their principal Characters, as to be included under the ſame Genus by the Botaniſts, yet they never vary from one to the other, though they frequently change and vary in the Colour of their Flowers.

I ſhall now proceed to treat of theſe under their different Sections, and firſt I ſhall begin with the Pink, of which there are a great Variety now cultivated, the principal of which are; the damaſk Pink, the white Shock; the Pheaſant Eye with double and ſingle Flowers, varying greatly in their Size and Colour, the common red Pink, Cob's Pink, Dobſon's Pink, white Cob Pink, and Bat's Pink. The old Man's Head, and Painted Lady Pink, rather belong to the Carnation.

The damaſk Pink is the firſt of the double Sorts in flower; this hath but a ſhort Stalk, the Flower is not very large, nor ſo double as many others, the Colour is of a pale Purple inclining to red, but very ſweet.

The next which flowers is the white Shock, which was ſo called from the Whiteneſs of its Flowers, and the Borders of the Petals being much jagged and fringed; the Scent of this is not ſo agreeable as of ſome others.

Then comes all the different Kinds of Pheaſants Eye, of which there are frequently new Varieties raiſed, which are either titled from the Perſons who raiſed them, or the Places where they were raiſed; ſome of theſe have very large double Flowers, but thoſe which burſt their Pods, are not ſo generally eſteemed.

The Cob Pink comes after theſe to flower, the Stalks are much taller than any of the former; the Flowers are very double, and of a bright red Colour; theſe have the moſt agreeable Odours of all the Sorts, ſo merits a Place in every good Garden. The Time of the Pinks flowering is from the latter end of *May* to the Middle of *July*, and frequently that Sort of Pheaſant Eye, called Bat's Pink, will flower again in Autumn.

The old Man's Head Pink, and the painted Lady, do not flower till *July*, coming at the ſame Seaſon with the Carnation, to which they are more nearly allied than the Pink. The firſt, when in its proper Colours, is purple and white ſtriped and ſpotted, but this frequently is of one plain Colour which is purple; this Sort will continue flowering till the Froſt in Autumn puts a Stop to it, and the Flowers having an agreeable Scent renders them valuable. The painted Lady is chiefly admired for the Livelineſs of its Colour, for it is not ſo ſweet, or of ſo long Continuance as the other.

The common Pinks are propagated either by Seeds, which is the Way to obtain new Varieties, or by Layers, as practiſed for Carnations, or by Slips, which, if carefully planted will take Root very well.

If they are propagated by Seeds, there ſhould be Care taken in the Choice of them, and only the Seeds of the beſt Sorts ſaved, where you are curious to have the fineſt Flowers. Theſe Seeds may be ſown in Spring, and the Plants afterward treated as is hereafter directed for the Carnation, with this difference only, that as the Pinks are leſs tender, they may be more hardily treated: Thoſe which are propagated by Layers, muſt be alſo managed as the Carnation, for which there are full Inſtructions hereafter. The old Man's Head and painted Lady Pinks, are commonly propagated this Way, but moſt of the other Sorts are propagated from Slips.

The beſt Time to plant the Slips of Pinks is about the End of *July*, when, if there ſhould happen Rain, it will be of great Service to them, but if the Weather be dry, they will require to be conſtantly watered every other Day, untill they have taken Root; theſe ſhould be planted in a ſhady Border, and the Ground ſhould be dug well, and all the Clods broken, and if no Rain falls, it ſhould be well ſoaked with Water a few Hours before the Slips are planted; then the Slips ſhould be taken from the Plants and all their lower Leaves ſtripped off, and planted as ſoon as poſſible after, for if they are ſuffered to lie long after they are taken from the Plants, they will wither and ſpoil; theſe need not be planted at a greater Diſtance than 3 Inches ſquare, and the Ground muſt be cloſed very hard about them; then they muſt be well watered, and this muſt be repeated, as often as it is found neceſſary, till the Cuttings have taken Root, after which they will require no other Care but to keep them clean from Weeds till Autumn, when they ſhould be tranſplanted to the Borders of the Flower Garden where they are to remain: Some plant the Slips of Pinks later in the Seaſon than is here directed; but thoſe Plants are never ſo ſtrong nor flower ſo well, as thoſe which are early planted.

We ſhall next proceed to the Culture of the Carnation, theſe the Floriſts diſtinguiſh into 4 Claſſes.

The 1ſt they call *Flakes*; theſe are of 2 Colours only, and their Stripes are large, going quite through the Leaves.

The 2d are called *Bizarrs*; theſe have Flowers ſtriped or variegated with 3 or 4 different Colours, in irregular Spots and Stripes.

The 3d are called *Piquettes*; theſe Flowers have always a white Ground, and are ſpotted (or pounced, as they call it) with ſcarlet, red, purple, or other Colours.

The 4th are called *painted Ladies*; theſe have their Petals of a red or purple Colour on the upper Side, and are white underneath.

Of each of theſe Claſſes there are numerous Varieties, but chiefly of the Piquettes, which ſome Years ago were chiefly in Eſteem with the Floriſts, but of late the Flakes have been in greater Eſteem, than any of the other Kinds. To enumerate the Varieties of the chief Flowers in any one of theſe Claſſes, would be needleſs, ſince every Country produces new Flowers almoſt every Year; ſo that thoſe Flowers, which, at their firſt Raiſing were greatly valued, are in 2 or 3 Years become ſo common, as to be of little Worth, eſpecially if they are defective in any one Property. Therefore (where Flowers are ſo liable to Mutability, either from the Fancy of the Owner, or that better Kinds are yearly produced from Seeds, which, with good Floriſts, always take place of older or worſe Flowers, which are turned out of the Garden to make Room for them) it would be but ſuperfluous to give a Liſt of their Names, which are generally borrowed either from the Names and Titles of Noblemen, or from the Perſon's Name, or Place of Abode, who raiſed them.

Theſe Flowers are propagated either from Seeds (by which new Flowers are obtained), or from Layers, for the Increaſe of thoſe Sorts which are worthy maintaining; but I ſhall firſt lay down the Method of propagating them from Seed, which is thus:

Having obtained good Seeds, either of your own ſaving, or from a Friend you can confide in; about the Middle of *April*, prepare ſome Pots or Boxes (according to the Quantity of Seed you have to ſow;) theſe ſhould be filled with freſh light Earth mixed with rotten Neat's Dung, which ſhould be well incorporated together; then ſow your Seeds thereon (but not too thick), covering it about a Quarter of an Inch with the ſame light Earth, placing the Pots, or Caſes, ſo as to receive the Morning Sun only, till Eleven of the Clock, obſerving to refreſh the Earth with Water as often as it may require; in about a Month's Time your Plants will come up, and if kept clear from Weeds, and duly watered, will be fit to tranſplant about the latter End of *June*; at which Time you ſhould prepare ſome Beds (of the ſame Sort of Earth as was directed to ſow them in) in an open airy Situation, in which you ſhould plant them at about 3 Inches ſquare, obſerving to water and ſhade them, till they have taken new Root, then you muſt obſerve to keep them clear from Weeds; in theſe Beds they may remain until the Middle of *Auguſt*, by which Time they will have grown ſo large as almoſt to meet each other; then prepare ſome more Beds of the like good Earth (in Quantity proportionable to the Flowers you have raiſed), in which you ſhould plant them at 6 Inches Diſtance each Way, and not above 4 Rows in each Bed, for the more convenient laying ſuch of them as may prove worthy preſerving; for in theſe Beds they ſhould remain to flower.

The Alleys between theſe Beds ſhould be 2 Feet wide, that you may paſs between the Beds to weed and clean them. If the Seaſon ſhould prove very dry at this Time, they ſhould not be tranſplanted till there is ſome Rain, ſo that it may happen to be the Middle, or latter End of *September* ſome Years, before there may be Wet enough to moiſten the Ground for this Purpoſe; but if there is Time enough for the Plants to get good Root before the Froſt comes on, it will be ſufficient. If the Winter ſhould prove ſevere, the Beds ſhould be arched over with Hoops, that they may be covered with Mats, otherwiſe many of the Plants may be deſtroyed, for the good Flowers are not ſo hardy as the ordinary ones of this Genus. There will be no other Culture wanting to theſe, but to keep them clean from Weeds, and when they ſhoot up their Stalks to flower, they muſt be ſupported by Sticks to prevent their breaking. When your Flowers begin to blow, you muſt look over them to ſee which of them offer to make good Flowers; which as ſoon as you diſcover, you ſhould lay down all the Layers upon them; thoſe which are well marked, and blow whole without breaking their Pods, ſhould be reſerved to plant in Borders, to furniſh you with Seed, and thoſe which burſt their Pods, and ſeem to have good Properties, ſhould be planted in Pots, to try what their Flowers will be, when managed according to Art; and it is not till the 2d Year that you can pronounce what the Value of a Flower will be, which is in Proportion to the Goodneſs of its Properties; but, that you may be well acquainted with what the Floriſts call good Properties, I ſhall here ſet them down.

1. The Stem of the Flower ſhould be ſtrong, and able to ſupport the Weight of the Flower without loping down.

2. The Petals (or Leaves) of the Flower ſhould be long, broad, and ſtiff, and pretty eaſy to expand, or (as the Floriſts term them) ſhould be free Flowers.

3. The middle Pod of the Flower ſhould not advance too high above the other Part of the Flower.

4. The Colours ſhould be bright, and equally marked all over the Flower.

5. The Flower ſhould be very full of Leaves, ſo as to render it, when blown, very thick and high in the Middle, and the Outſide perfectly round.

Having made Choice of ſuch of your Flowers as promiſe well for the large Sort, theſe you ſhould mark ſeparately for Pots, and the round whole blowing Flowers for Borders; pull up all ſingle Flowers, or ſuch as are ill-coloured, and not worth preſerving, that your good Flowers may have the more Air and Room to grow ſtrong; theſe having been laid, as ſoon as they have taken Root (which will be ſome Time in *Auguſt*,) they ſhould be taken off, and planted out, thoſe that blow large in Pots, and the other in Borders.

Of late Years the whole-blowing Flowers have been much more eſteemed than thoſe large Flowers which burſt their Pods; but eſpecially thoſe round Flowers which have broad Stripes of beautiful Colours, and round Roſe Leaves, of which Kinds there have been a great Variety introduced from *France*; but as theſe *French* Flowers are extremely apt to degenerate to plain Colours, and being much tenderer than thoſe which are brought up in *England*, there are not ſuch great Prices given for the Plants now, as have been a few Years paſt; from the preſent Taſte for theſe whole-blowing Flake Flowers, many of the old Varieties, which had been turned out of the Gardens of Floriſts many Years ago, to make Room for the large Flowers which were then in Faſhion, have been received again; and large Prices have been paid of late for ſuch Flowers as ſome Years ago were ſold for one Shilling a Dozen, or leſs, which is a ſtrong Proof of the Variableneſs of the Fancies of Floriſts.

I ſhall now proceed to give ſome Directions for propagating theſe Flowers by Layers, and the neceſſary Care to be taken in Order to blow them fair and large.

The beſt Seaſon for laying theſe Flowers is in *June*, as ſoon as the Shoots are ſtrong enough for that Purpoſe, which is performed in the following Manner; after having ſtripped off the Leaves from the lower Part of the Shoot intended to be laid, make Choice of a ſtrong Joint about the middle Part of the Shoot (not too near the Heart of the Shoot, nor in the hard Part next the old Plant;) then with your Penknife make a Slit in the Middle of the Shoot from the Joint upwards half Way to the other Joint, or more, according to their Diſtance; then with your Knife cut the Tops of the Leaves, and alſo cut off the ſwelling Part of the Joint where the Slit is made, ſo that the Part ſlit may be ſhaped like a Tongue; when that outward Skin is pared off, which, if left on, would prevent their puſhing out Roots; having looſened the Earth round the Plant, and if Need be, raiſed it with freſh Mould, that it may be level with the Shoot intended to be laid, leſt by the Ground being being too low, you ſplit it off by forcing down the Shoot; then with your Finger make a hollow Place in the Earth, juſt where the Shoot is to come, and with your Thumb and Finger bend the Shoot gently into the Earth, obſerving to keep the Top as upright as poſſible, that the Slit may be open; and being provided with forked Sticks for that Purpoſe, thruſt one of them into the Ground, ſo that the forked Part may take hold of the Layer, and keep it down in its proper Place; then gently cover the Shank of the Layer with the ſame Sort of Earth, giving it a gentle Watering, to ſettle the Earth about it, obſerving to repeat the ſame as often as is neceſſary, to promote their rooting. In about 5 or 6 Weeks after this, the Layers will have taken Root ſufficient to be tranſplanted; againſt which Time you ſhould be provided with proper Earth for them, which may be compoſed after the following Manner:

Make Choice of ſome good up-land Paſture or Common, of a hazel Earth, or light ſandy Loam; dig from the Surface of this your Earth about 8 Inches deep, taking all the Turf with it; let this be laid in a Heap to rot and mellow for one Year, turning it once a Month, that it may ſweeten; then mix about a 3d Part of rotten Neats Dung, or for Want of that, ſome rotten Dung from a Cucumber or Melon Bed; let this be well mixed together, and if you can get it Time enough before-hand, let them lie mixed 6 or 8 Months before it is uſed, turning it ſeveral Times, the better to incorporate their Parts.

Obſerve, that although I have mentioned this Mixture as the beſt for theſe Flowers, yet you muſt not expect to blow your Flowers every Year equally large, in the ſame Compoſition; therefore ſome who are extremely fond of having their Flowers ſucceed well, alter their Compoſitions every Year in this Manner, *viz.* one Year they mix the freſh Earth with Neats Dung, which is cold; the next Year with rotten Horſe Dung, which is of a warmer Nature, adding thereto ſome white Sea Sand, to make the Earth lighter.

But, I ſhould rather adviſe the Planting 2 or 3 Layers of each of your beſt Kinds in a Bed of freſh Earth not over dunged; which Plants ſhould only be ſuffered to ſhew their Flowers, that you may be ſure they are right in their Kind; and when you are ſatisfied in that Particular, cut off the Flower Stems, and do not ſuffer them to ſpend the Roots in Blowing; by which Means you will ſtrengthen your Layers. And it is from theſe Beds I would make Choice of ſome of the beſt Plants for the next Year's blowing, always obſerving to have a Succeſſion of them yearly, by which Means you may blow every Year fine, ſuppoſing the Seaſon favourable: For it is not reaſonable to ſuppoſe, that the Layers taken from ſuch Roots as have been exhauſted in producing large Flowers, and have been forced by Art beyond their natural Strength, ſhould be able to produce Flowers equally as large as their Mother Root did the Year before, or as ſuch Layers as are freſh from a poorer Soil, and in greater Health can do. Let us now proceed to planting theſe Layers, which ſhould be done in *Auguſt*, or the Beginning of *September*.

The common Method uſed by moſt Floriſts is, to plant their Layers, at this Seaſon, two in each Pot (the Size of which Pots are about 9 Inches over in the Clear at the Top); in theſe Pots they are to remain for Bloom; and therefore, in the Spring of the Year, they take off as much of the Earth from the Surface of the Pots as they can, without diſturbing their Roots, filling the Pots up again with the ſame good freſh Earth as the Pots were before filled with. But there is ſome Difficulty in ſheltering a great Quantity of theſe Flowers in Winter, when they are planted in ſuch large Pots, which in moſt Winters they will require, more or leſs; my Method therefore is, to put them ſingly into Halfpenny Pots in Autumn, and in the Middle of *October* to ſet theſe Pots into a Bed of old Tanners Bark, which has loſt its Heat, and cover them with a common Frame (ſuch as is uſed for raiſing Cucumbers and Melons;) and in 2 of theſe Frames, which contain 6 Lights, may be ſet 150 of theſe

Pots: In theſe Frames you may give them as much free Air as you pleaſe, by taking off the Lights every Day when the Weather is mild, and putting them on only in bad Weather, and great Rains: and if the Winter ſhould prove ſevere, cover the Glaſſes with Mats, Straw, or Peaſe Haulm, ſo as to keep out the Froſt, which will effectually preſerve your Plants in the utmoſt Vigour.

In the Middle of *February*, if the Seaſon is good, you muſt tranſplant theſe Layers into Pots for their Bloom (the Size of which ſhould be about 7 or 8 Inches over at the Top in the Clear;) in doing which, obſerve to put ſome Potſherd or Oyſter Shells over the Holes in the Bottoms of the Pots to keep the Earth from ſtopping them, which would detain the Water in the Pots to the great Prejudice of the Flowers: Then fill theſe Pots about Halfway with the ſame good Compoſt as before directed, and ſhake the Plant out of the ſmall Pot with all the Earth about the Roots; then with your Hands, take off ſome of the Earth round the Outſide of the Ball, and from the Surface, taking off the Fibres of the Roots on the Outſide of the Ball of Earth, then put one good Plant exactly in the Middle of each Pot, ſo that it may ſtand well as to the Height, *i. e.* not ſo low as to bury the Leaves with Earth, nor ſo high, that the Shank may be above the Rim of the Pot; then fill the Pot up with the ſame Compoſt, cloſing it gently to the Plant with your Hands, giving it a little Water, if the Weather is dry, to ſettle the Earth; then place the Pots in a Situation where they may be defended from the North Wind; obſerving to give them gentle Waterings, as the Seaſon may require.

In this Place they may remain till the Middle, or latter End of *April*, when you ſhould prepare a Stage of Boards to ſet the Pots upon, ſo contrived as to have little Ciſterns of Water round each Poſt, to prevent the Inſects from getting to your Flowers in their Bloom; which, if they are ſuffered to do, will mar all your Labour, by deſtroying all your Flowers in a ſhort Time; the chief and moſt miſchievous Inſect is the Earwig, which will gnaw off all the lower Parts of the Petals of the Flowers (which are very ſweet,) and thereby cauſe the whole Flower to fall to Pieces; but ſince the making one of theſe Stages is ſomewhat expenſive, and not very eaſy to be underſtood by ſuch as have never ſeen them, I ſhall deſcribe a very ſimple one, which I have uſed for ſeveral Years, which anſwers the Purpoſe full as well as the beſt and moſt expenſive one can do: Firſt, prepare ſome common flat Pans, about a Foot, or 14 Inches over, and 3 Inches deep; place theſe two and two oppoſite to each other, at about 2 Feet Diſtance, and at every 8 Feet in Length-ways, two of theſe Pans; in each of theſe turn a Flower Pot upſide down, which ſhould be about 6 Inches over at the Top, and lay a flat Piece of Timber, about 2 Feet and a Half long, and 3 Inches thick, croſs from Pot to Pot, till you have finiſhed the whole Length of your Stage; then lay your Planks Lengthways upon theſe Timbers, which will hold two Rows of Planks for the Pots which were ordered for Carnations; when you have ſet your Pots upon the Stage, fill the flat Pans with Water, always obſerving, as it decreaſes in the Pans, to repleniſh it, which will effectually guard your Flowers againſt Inſects, for they do not care to ſwim over Water, ſo that if by this, or any other Contrivance, the Paſſage from the Ground to the Stage, on which the Pots are placed, is defended by a Surface of Water 3 or 4 Inches broad, and as much in Depth, it will effectually prevent theſe Vermin from getting to the Flowers.

This Stage ſhould be placed in a Situation open to the South Eaſt, but defended from the Weſt Winds, to which theſe Stages muſt not be expoſed, leſt the Pots ſhould be blown down by the Violence of that Wind, which is often very troubleſome at the Seaſon when theſe Flowers blow; indeed they ſhould be defended by Trees at ſome Diſtance, from the Winds of every Point; but theſe Trees ſhould not be too near the Stage, nor by any Means place them near Walls, or tall Buildings; for in ſuch Situations the Stems of the Flowers will draw up too weak. About this Time, *viz.* the Middle of *April*, your Layers will begin to ſhoot up for flower; you muſt therefore be provided with ſome ſquare Deal Sticks, about 4 Feet and a Half long, which ſhould be thicker toward the Bottom, and planed off taper at the Top; theſe Sticks ſhould be carefully ſtuck into the Pots as near as poſſible to the Plant without injuring it; then with a ſlender Piece of Baſs Mat faſten the Spindle to the Stick to prevent its being broken; this you muſt often repeat, as the Spindle advances in Height, and alſo obſerve to pull off all Side Spindles as they are produced, and never let more than 2 Spindles remain upon one Root, nor above one, if you intend to blow exceeding large. Toward the Beginning of *June* your Flowers will have attained their greateſt Height, their Pods will begin to ſwell, and ſome of the earlieſt begin to open on one Side; you muſt therefore obſerve to let it open in 2 other Places at equal Angles; this muſt be done ſo ſoon as you perceive the Pod break, otherwiſe your Flower will run out on one Side, and be in a ſhort Time paſt recovering, ſo as to make a complete Flower; in a few Days after the Flowers begin to open, you muſt cover them with Glaſſes which are made for that Purpoſe, in the following Manner:

On the Top of the Glaſs, exactly in the Center, is a Tin Collar, or Socket, about Three-fourths of an Inch ſquare, for the Flower Stick to come through; to this Socket are ſoldered 8 Slips of Lead at equal Diſtances, which are about 6 Inches and a Half long, and ſpread open at the Bottom about 4 Inches aſunder; in theſe Slips of Lead are faſtened Slips of Glaſs, cut to the Diſtances of the Lead, which, when fixed in, are bordered round the Bottom with another Slip of Lead quite round, ſo that the Glaſs hath 8 Angles, with the Socket in the Middle, and ſpread open at the Bottom about 11 Inches wide.

When your Flowers are open enough to cover with theſe Glaſſes, you muſt make a Hole through your Flower Stick, exactly to the Height of the under Part of the Pod, through which you ſhould put a Piece of ſmall Wire about 6 Inches long, making a Ring at one End of the Wire to contain the Pod, in which Ring you ſhould fix the Stem of the Flower; then cut off all the Tyings of Baſs, and thruſt the Stem of the Flower ſo far from the Stick, as may give convenient Room for the Flower to expand without preſſing againſt the Stick; to which Diſtance you may fix it, by turning your Wire ſo as not to draw back through the Hole; then make another Hole through the Stick, at a convenient Diſtance above the Flower, through which you ſhould put a Piece of Wire, an Inch and a Half long, which is to ſupport the Glaſſes from ſliding down upon the Flowers, and be ſure to obſerve, that the Glaſſes are not placed ſo high as to admit the Sun and Rain under them to the Flowers, nor ſo low as to ſcorch their Leaves with the Heat. At this Time alſo, or a few Days after, as you judge neceſſary, you ſhould cut ſome ſtiff Paper, or Cards, into Collars about 4 Inches over, and exactly round, cutting a Hole in the Middle of it about Three-fourths of an Inch Diameter, for the Bottom of the Flower to be let through; then place theſe Collars about them to ſupport the Petals of the Flower from hanging down; this Collar ſhould be placed within the Calyx of the Flower, and ſhould be ſupported thereby; then obſerve from Day to Day what Progreſs your Flowers make; and, if one Side comes out faſter than the other, turn the Pot about, and ſhift the other Side towards the Sun; alſo if the Weather proves very hot, you ſhould ſhade the Glaſſes in the Heat of the Day with Cabbage Leaves, *&c.* to prevent their being ſcorched, or forced out too ſoon; and, when the middle Pod begins to riſe, you ſhould take out the Calyx thereof with a Pair of Nippers made for that Purpoſe; but this ſhould not be done too ſoon, leſt the middle Part of the Flower ſhould advance too high above the Sides, which will greatly diminiſh the Beauty of it: And you ſhould alſo obſerve whether there are more Leaves in the Flower, than can properly be expanded for Want of Room; in which Caſe you ſhould pull out ſome of the lowermoſt or moſt unlikely Leaves to ſpread, drawing out and expanding the others at the ſame Time: When your Flowers are fully blown, if you cut them off, you ſhould put on a freſh Collar of ſtiff Paper, which ſhould be cut exactly to the Size of the Flower, that it may ſupport the Petals to their full Width, but not to be ſeen wider than the Flower in any Part: When this is put on, you muſt draw out the wideſt Leaves to form the Outſide of the Flower, which although they ſhould be in the Middle (as it often happens,) yet by removing the other Leaves they may be drawn down, and ſo the next longeſt Leaves upon them again, that the whole Flower may appear equally globular without any hollow Parts. In doing this, ſome Floriſts are ſo curious as to render an indifferent Flower very handſome; and on this depends, in a great Meaſure, the Skill of the Artiſt to produce his large and fine Flowers, to the greateſt Advantage.

During the flowering Seaſon, particular Care ſhould be taken not to let them ſuffer for Want of Water, which ſhould by no Means be raw Spring Water; nor do I approve of compound Waters, ſuch as are enriched with various Sorts of Dung; but the beſt and moſt natural Water is that of a fine ſoft River; next to that is Pond Water, or ſtanding Water; but if you have no other than Spring Water, it ſhould be expoſed to the Sun and Air two Days before it is uſed, otherwiſe it will give the Flowers the Canker, and ſpoil them.

The Directions here given are chiefly for the Management of thoſe large Carnations which burſt their Pods, and require the greateſt Skill of the Floriſts, to blow them in Perfection; but as of late theſe have not been ſo much in Eſteem as formerly, and thoſe Flowers which do not break their Pods, and are termed *whole Blowers* have now the Preference: Theſe are generally planted in Pots, and treated in the ſame Way as the large Flowers, but do not require ſo much Trouble to blow them: All that is neceſſary to be done for theſe, is to faſten their Stems up to Flower Sticks to prevent their being broken, and to take off the Pods which proceed from the Side of the Stalks, leaving only the Top Bud to flower, if they are intended to be large and fair; and when the Flowers begin to open, if they are ſcreened from the Sun in the Heat of the Day, and alſo from Wet, they will continue much longer in Beauty.

But although the moſt valuable of theſe Flowers are uſually planted in Pots, and thus carefully treated, yet many of theſe *whole blowing* Flowers may be planted in Beds, or the Borders of the Flower Garden, where they are ſome of the principal Ornaments during their Continuance in flower, which is from the Beginning of *July* till the Middle of *Auguſt*, eſpecially if the ſeveral Colours are properly intermixed; for the Flakes and Bizarrs, ſhould be intermixed with the Picquettes, and not planted ſeparate, unleſs where they are deſigned for ſaving the Seeds; in which Caſe, thoſe which are the fineſt of each Sort, ſhould be planted in Beds at a Diſtance from each other, eſpecially where Perſons are deſirous to keep them diſtinct; for where the Sorts are blended together, there will be an Admixture of their Farina, ſo that the Seeds will vary, and not produce the particular Kinds; though I do not remember ever to have ſeen any Flake Flowers ariſe from Seeds of the Picquettes, nor *vice verſâ*.

The Flowers which are planted in the full Ground, generally produce Seeds better than thoſe in Pots; but whoever propoſes to raiſe a Supply of new Flowers from Seeds, muſt always obſerve to ſave the beſt of their Seedling Flowers for this Purpoſe; for it is well known, that after any of theſe Flowers have been a few Years propagated by Layers, they become barren, and do not ſeed; which is alſo the Caſe with moſt other Plants which are propagated by Slips, Layers, or Cuttings; ſo that the young Plants which have been newly obtained from Seeds, are always the moſt productive of Seeds: The Plants which are propagated by Layers or Slips, will always continue to produce the ſame Flowers, ſo that when a fine Variety is obtained, it is this Way propagated and maintained; but all the new Varieties come from Seeds, ſo that all thoſe who are curious in theſe Flowers, annually ſow their Seeds.

I ſhall next proceed to the Culture of that Species, which is known by the Title of *Sweet William*; of this there are a great Variety of different Colours, which are ſingle, and 3 with double Flowers: Some of theſe have narrow Leaves, which were formerly titled *Sweet Johns*, but of late that Diſtinction has not been made, becauſe they are found to vary when raiſed from Seeds.

Some of the ſingle Flowers have very rich Colours, which frequently vary in the ſame Bunch; there are others with fine variegated Flowers, and others whoſe Middles are of a ſoft red, bordered with white, called Painted Ladies; but where Perſons are deſirous to preſerve any of theſe Varieties in Perfection, the beſt Flowers of each ſhould be particularly marked, and no other permitted to ſtand near them, leſt their Farina ſhould impregnate them, which would cauſe them to vary.

That called the Painted Lady Sweet William, is a very beautiful Variety; the Stalks do not riſe ſo high as moſt of the other; the Bunches of Flowers are larger, produced more in the Form of an Umbel, and the Flowers ſtanding equal in Height, make a better Appearance: There are others whoſe Stalks riſe 3 Feet, and the Flowers of a very deep red or ſcarlet Colour. They all flower at the ſame Time with the Carnations, which renders them leſs valuable, becauſe they have no Scent.

The ſingle Kinds of theſe are generally propagated by Seeds, which muſt be ſown the latter End of *March*, or the Beginning of *April*, in a Bed of light Earth, and in *June* they will be fit to tranſplant out; at which Time you muſt prepare ſome Beds, and ſet them at 6 Inches Diſtance every Way: In theſe Beds they may remain till *Michaelmas*, at which Time they may be tranſplanted into the Borders of the Pleaſure Garden or Wilderneſs. Theſe will flower the next Year in *June*, and perfect their Seeds in *Auguſt*, which you ſhould ſave from the beſt coloured Flowers for a Supply.

They may be alſo propagated by ſlipping their Roots at *Michaelmas*; but this is ſeldom practiſed, ſince their ſeedling Roots will always blow the ſtrongeſt, and new Varieties are obtained yearly.

The 3 Sorts with double Flowers, are, 1. The broad leaved Sort, which hath very double Flowers, of a deep purple Colour inclining to blue, which burſts its Pods, ſo not ſo much eſteemed as the others, and therefore is now almoſt totally baniſhed the Gardens of the Curious. 2. The Double Roſe Sweet William, whoſe Flowers are of a fine deep Roſe Colour, and ſmell ſweet; this is much valued for the Beauty and Sweetneſs of its Flowers; the Empalement (or Pods) of theſe Flowers never burſt, but the Flowers remain with their Petals fully expanded, and do not hang down looſely as thoſe of the former. 3. The Mule, or Fairchild's Sweet William; it hath narrower Leaves than either of the former, and is of that Variety called Sweet John: This was ſaid to have been produced from Seeds of a Carnation, which had been impregnated by the Farina of the Sweet William; the Flowers are of a brighter red Colour than either of the former, their Bunches not quite ſo large, but the Flowers have an agreeable Odour.

The double Kinds are propagated by Layers, as the Carnations; they love a middling Soil, not too light, nor too heavy or ſtiff, nor too much dunged, which very often occaſions their rotting: Theſe continue flowering a long Time, and are extremely beautiful, eſpecially the Mule, which produces two full Blooms of Flowers, one in *June*, and the other in *July*. This is very ſubject to canker and rot away, eſpecially if planted in a Soil over wet or too dry, or if watered with ſharp Spring Water. Theſe Flowers being planted in Pots, are very proper to adorn Court Yards at the Time they are in flower.

The *China* Pink is generally eſteemed an annual Plant, becauſe the Plants which are raiſed from Seeds flower and produce ripe Seeds the ſame Seaſon, ſo their Roots are not often preſerved; but when planted on a dry Soil, they will continue 2 Years, and the ſecond Year will produce a greater Number of Flowers than the firſt. There are a great Variety of very rich Colours in theſe Flowers, which annually vary when raiſed from Seeds. The double Flowers are moſt eſteemed, though the Colours of the ſingle are more diſtinct and beautiful; for the Multiplicity of Petals in the double Flowers, in a great Meaſure hides the deep Shades, which are toward the lower Part of the Petals.

Theſe Plants are propagated by Seeds, which ſhould be ſown on a gentle hot Bed about the Beginning of *April*; this moderate Heat is only intended to forward the Vegetation of the Seeds, therefore when the Plants come up, they muſt have a large Share of Air admitted to them, to prevent their drawing up weak; and as ſoon as the Weather will permit, they muſt be expoſed to the open Air; in about 3 Weeks or a Month, the Plants will be fit to remove; then they ſhould be carefully taken up with good Roots, and planted in a Bed of rich Earth, at about 3 Inches aſunder, being careful to ſhade them from the Sun till they have taken new Root, and in dry Weather they muſt have Water 3 or 4 Times a Week. The farther Care is to keep them clean from Weeds till the End of *May*, at which Time they may be tranſplanted to the Places where they are deſigned to remain for flowering, when they may be taken up with large Balls of Earth to their Roots, ſo as ſcarcely to feel their Removal, eſpecially if it happens to rain at that Time.

As theſe Plants do not grow large, ſo when they are planted ſingly in the Borders of the Flower Garden, they do not make ſo fine an Appearance, as when planted by themſelves in Beds; or if planted in ſmall Clumps, of 6 or 8 Roots in each, where the Flowers being of different Colours, ſet off each other to Advantage.

Thoſe who are curious in theſe Flowers, take particular Care in ſaving their Seeds, for they never permit any ſingle Flowers to ſtand among their double, but pull them up as ſoon as they ſhew their Flowers, and alſo draw out all thoſe which are not of lively good Colours; where this is obſerved, the Flowers may be kept in great Perfection; but where Perſons have truſty Friends, who live at ſome Diſtance, with whom they can exchange Seeds, once in 2 or 3 Years; it is much better ſo to do, than to continue ſowing Seeds in the ſame Place many Years in Succeſſion, and this holds true in moſt Sorts of Seeds: But the great Difficulty is to meet with an honeſt Perſon of equal Skill, who will be as as careful in the Choice of his Plants for Seed, as if he was to ſow them himſelf.

DIAPENSIA. *See* Sanicula.

DICTAMNUS. *Lin. Gen. Plant.* 468. *Fraxinella. Tourn. Inſt. R. H.* 430. *Tab.* 243. White Dittany, or *Fraxinella*, in *French Fraxinelle*. This Plant was ſo titled from *Fraxinus* the Aſh Tree, the Leaves of this having ſome Reſemblance in their Form, to thoſe of the Aſh Tree, ſo it was called *Fraxinella*, or Little Aſh.

The *Characters* are,

The Empalement is compoſed of 5 *ſmall oblong Leaves, ending in Points. The Flower hath* 5 *oblong Petals which are unequal, two of them turning upward, two are oblique on the Sides, and one turns downward. It hath* 10 *riſing Stamina, as long as the Petals, which are ſituated between the two Side Petals; they are not equal in Length, and are terminated by obtuſe* 4 *cornered Summits ſtanding erect. In the Center is ſituated a* 5 *cornered Germen ſupporting* *a ſhort incurved Style, crowned by an acute Stigma; the Germen afterward becomes a Capſule with 5 Cells, each having a compreſſed Margin, which ſpread open at their exterior Parts, but join together at their inner, opening with 2 Valves, and incloſing ſeveral roundiſh hard ſhining Seeds.*

We have but one diſtinct *Species* of this Genus, *viz.*

Dictamnus. *Hort. Cliff.* 161. *Fraxinella. Cluſ. Hiſt.* 99. and *Dictamnus albus vulgò fraxinella. C. B. P.* 222. White Dittany, commonly called *Fraxinella.*

There are three Varieties of this Plant, one with a pale red Flower ſtriped with purple, another with a white Flower, and one with ſhorter Spikes of Flowers; but as I have obſerved them to vary when propagated by Seeds, ſo I eſteem them only ſeminal Varieties.

This is a very ornamental Plant for Gardens, and as it requires very little Culture, ſo deſerves a Place in all good Gardens. It hath a perennial Root, which ſtrikes deep into the Ground, and the Head annually increaſes in Size; theſe ſend up many Stalks, which riſe from 2 to 3 Feet high, garniſhed with winged Leaves placed alternate; theſe are compoſed of 3 or 4 Pair of oblong Lobes, terminated by an odd one: They are ſmooth and ſtiff, ſitting cloſe to the Mid-rib, which hath a longitudinal Furrow on the upper Side; the Lobes (or ſmall Leaves) placed on each Side the Mid-rib, are oblique, but thoſe which terminate the Leaf have their Sides equal. The Flowers are produced in a long pyramidal looſe Spike, or Thyrſe; on the Top of the Stalk, which is 9 or 10 Inches long; the Flowers of one Sort are white, and of the other they are of a pale red marked with red or purple Stripes. The whole Plant when gently rubbed, emits an Odour like that of Lemon Peel, but when bruiſed has ſome-thing of a balſamick Scent. It flowers the latter End of *May,* and in *June,* and the Seeds ripen in *September.*

Theſe Plants are propagated by Seeds, which, if ſown in Autumn ſoon after they are ripe, the Plants will appear the following *April*; but when they are kept out of the Ground till Spring, they ſeldom ſucceed; or if they do grow, it is the following Spring before the Plants appear, ſo that a whole Year is loſt. When the Plants come up, they muſt be conſtantly kept clean from Weeds; and in the Autumn when their Leaves decay, the Roots ſhould be carefully taken up, and planted in Beds at 6 Inches Diſtance every Way; theſe Beds may be 4 Feet broad, and the Paths between them 2, that there may be Room enough to paſs between to weed them. In theſe Beds the Plants may ſtand 2 Years, during which Time they muſt be conſtantly kept clean from Weeds; and if they thrive, will be ſtrong enough to flower, ſo in Autumn they ſhould be carefully taken up, and planted in the Middle of the Borders of the Flower Garden, where they will continue 30 or 40 Years, producing more Stems of Flowers in Proportion to the Size of the Roots. All the Culture theſe require, is to be kept clean from Weeds, and the Ground about them dug every Winter.

The Roots of this Plant are uſed in Medicine, and eſteemed cordial and cephalick, reſiſting Putrefaction aud Poiſon, and are uſeful in malignant and peſtilential Diſtempers, as alſo in Epilepſies.

DICTAMNUS CRETICUS. *See* Origanum.

DIERVILLA. *Tourn. Lonicera. Lin. Gen. Pl.* 210.

The Title was given it by Dr. *Tournefort,* after Mr. *Dierville,* a Surgeon, who brought it from *Acadia.*

The *Characters* are,

The Empalement of the Flower is cut into 5 Parts, almoſt to the Bottom; the Flower is of one Leaf, having a Tube at the Bottom, but is cut into 5 Parts at the Top, and has the Appearance of a Lip Flower; it hath 5 Stamina, terminated by oblong Summits, which are equal with the Petal. At the Bottom of the Flower is ſituated an oval Germen fixed to the Empalement, ſupporting a ſlender Style equal with the Stamina, crowned by an obtuſe Stigma; the Germen afterward becomes a pyramidal Berry, divided into 4 Cells, which contain ſmall round Seeds.

We know but one *Species* of this Genus, *viz.*

Diervilla *Acadienſis fruticoſa, flore luteo. Act. R. Par.* 1706. Shrubby *Diervilla* of *Acadia* with a yellow Flower. This is the *Lonicera racemis terminalibus foliis ſerratis. Lin. Sp. Plant.* 275. *Lonicera* with Bunches of Flowers terminating the Branches and ſawed Leaves.

This Plant grows naturally in the northern Parts of *America,* from whence it was brought to *Europe,* and is now propagated in the Gardens for Sale. It hath woody Roots which ſpread far in the Ground, and put out Shoots at a Diſtance from the principal Stalk, whereby it multiplies greatly: The Stalks are ligneous, and ſeldom riſe more than a Foot and a Half high; theſe are garniſhed with oblong Heart-ſhaped Leaves, ending in acute Points; they are very ſlightly ſawed on their Edges, and are placed oppoſite, ſitting cloſe to the Stalks: The upper Part of the Stalks is garniſhed with Flowers, which uſually come out from the Side of the Stalk at the ſitting on of the Leaves, and alſo at the Top of the Stalks; there are 2 or 3 Flowers ſuſtained upon each Foot Stalk: They are of a pale yellow, and being ſmall, make no great Appearance. Theſe come out in *May,* and if the Seaſon proves moiſt and cold, they frequently flower again in *Auguſt.*

It is eaſily propagated by Suckers, which it ſends out in Plenty, and loves a moiſt Soil and ſhady Situation, where the Cold will never injure it.

DIGITALIS. *Lin. Gen. Pl.* 676. *Tourn. Inſt. R. H. Raii Meth. Pl.* 89. Foxglove, in *French Digitale.*

The *Characters* are,

It hath a permanent Empalement cut into 5 Parts; the Flower is Bell-ſhaped, of one Petal, with a large open Tube, whoſe Baſe is cylindrical and contracted, but the Brim is divided into 4 Parts ſlightly; the upper Lip ſpreading and indented at the Top, the lower is larger. It hath 4 Stamina, inſerted in the Baſe of the Petal, two being longer than the other, which are terminated by bipartite acuminated Summits; the Flower being paſt, the Germen ſwells to an oval Capſule, having 2 Cells ſitting on the Empalement, incloſing many ſmall angular Seeds.

The *Species* are,

1. Digitalis *calycinis foliolis ovatis acutis, corollis obtuſis, labio ſuperiore integro. Hort. Upſal.* 178. Foxglove whoſe ſmall Leaves of the Empalement are oval and acute, the Petals obtuſe, and the upper Lip entire. *Digitalis purpurea folio aſpero. C. B. P.* 243. Purple Foxglove with a rough Leaf; or common Foxglove.

2. Digitalis *calycinis foliolis acutis, corollis acutis, labio ſuperiore bifido.* Foxglove with acute Leaves to the

Empalement, the Petal ſharp-pointed, and the upper Lip bifid. This is the *Digitalis Hiſpanica purpurea minor. Tourn. Inſt.* 165. Leſſer *Spaniſh* purple Foxglove.

3. DIGITALIS *calycinis foliolis acutis, corollis obtuſis, labio ſuperiore integro, foliis lanceolatis obtuſis.* Foxglove with acute Leaves to the Empalement, an obtuſe Petal, whoſe upper Lip is entire, and obtuſe Spear-ſhaped Leaves. This is the *Digitalis minor lutea, parvo flore. C. B. P.* Leſſer yellow Foxglove with a ſmall Flower.

4. DIGITALIS *foliolis calycinis acutis, corollis obtuſis, labio ſuperiore trifido, foliis oblongo-cordatis acutis.* Foxglove with acute Leaves to the Empalement, an obtuſe Petal, whoſe upper Lip is trifid, and oblong Heart-ſhaped pointed Leaves. This is the *Digitalis major lutea, vel pallida parvo flore. C. B. P.* 244. Greater Foxglove with a ſmall yellow or pale Flower.

5. DIGITALIS *foliolis calycinis linearibus, corollis acutis, labio ſuperiore integro, foliis lanceolatis.* Foxglove with long narrow Leaves to the Empalement, an acute Petal, whoſe upper Lip is entire, and Spear-ſhaped Leaves. This is the *Digitalis lutea, magno flore. C. B. P.* 244. Yellow Foxglove with a larger Flower.

6. DIGITALIS *calycinis foliolis ovatis obtuſis, corollæ labio inferiore longitudine floris. Lin. Sp. Plant.* 622. Foxglove with oval blunt Leaves to the Empalement, and the lower Lip of the Petal as long as the Flower. This is the *Digitalis anguſtifolia, flore ferrugineo. C. B. P.* 244. Narrow-leaved Foxglove with an Iron-coloured Flower.

7. DIGITALIS *calycinis foliolis ovatis obtuſis, corollæ labio inferiore reflexo, foliis inferioribus lanceolatis ſuperioribus linearibus.* Foxglove with oval blunt Leaves to the Empalement, the under Lip of the Petal reflexed, the lower Leaves Spear-ſhaped, and the upper linear. This is the *Digitalis latifolia flore ferrugineo. H. R. Par.* Broad-leaved Foxglove with an Iron-coloured Flower.

8. DIGITALIS *calycinis foliolis lanceolatis, corollis bilabiatis acutis, caule fruticoſo. Lin. Sp. Plant.* 622. Foxglove with Spear-ſhaped Leaves to the Empalement, an acute Petal with two Lips, and a ſhrubby Stalk. This is the *Digitalis acanthoides Canarienſis fruteſcens, flore aureo. Hort. Amſt.* 2. p. 105. Shrubby *Canary* Foxglove like Bearſbreech, with a golden Flower.

9. DIGITALIS *calycinis foliolis acutis, foliis ovato-lanceolatis nervoſis.* Foxglove with acute Leaves to the Empalement, and oval Spear-ſhaped veined Leaves. This is the *Digitalis lutea non ramoſa, ſcorzoneræ folio. Buxb. Cent.* 25. Yellow unbranched Foxglove with a Leaf like Scorzonera.

The 1ſt Sort grows naturally by the Side of Hedges in ſhady Woods in moſt Parts of *England*, ſo is rarely cultivated in Gardens. This is a biennial Plant, which the firſt Year produces a great Tuft of long rough Leaves which are hairy; the ſecond Year it ſhoots up a ſtrong herbaceous Stalk, which riſes from 3 to 4 Feet high, garniſhed with Leaves of the ſame Form as the lower, but they gradually leſſen upward, ſo thoſe which are intermixed with the Flowers on the Top, are very narrow. The Flowers grow in a long looſe Thyrſe, ſtanding only on one Side of the Stalk; they are large, tubulous, and ſhaped like a Thimble, of a purple Colour, with ſeveral white Spots on the under Lip; theſe Flowers are ſucceeded by oval Capſules with 2 Cells, filled with dark brown Seeds. It flowers in *June*, and the Seeds ripen in Autumn; if they are permitted to ſcatter, the Plants will come up in Spring, and become troubleſome Weeds; but whoever has a Mind to cultivate it, ſhould ſow the Seeds in Autumn, for thoſe ſown in Spring ſeldom ſucceed. This Plant ſtands in the Liſt of medicinal Simples of the Diſpenſatories, and there is an Ointment made of the Flowers and May-butter, which has been in good Eſteem.

There is a Variety of this with a white Flower, which is found growing naturally in ſome Parts of *England*, which differs only in the Colour of the Flower; this Difference is permanent, for I have cultivated it near 30 Years in the Garden, and have never found it vary.

The 2d Sort grows naturally in *Spain*, from whence I received the Seeds; this Plant ſeldom riſes much more than a Foot high, the lower Leaves are 10 Inches long, and 3 broad in the Middle; they are ſoft, woolly, and roughly veined on their under Side; the Stalks are garniſhed with Leaves of the ſame Shape, but ſmaller; the upper Part of the Stalk hath a ſhort Thyrſe of purple Flowers like thoſe of the common Sort but ſmaller, and the Segments of the Petal are acute. This Plant retains its Difference when cultivated in Gardens.

The 3d Sort hath very long obtuſe Leaves near the Root; the Stalk is ſmall, and riſes from 2 to 3 Feet high, the lower Part being pretty cloſely garniſhed with ſmooth Leaves, about 3 Inches long and one broad, ending in obtuſe Points: The upper Part of the Stalk, for 10 Inches in Length, is adorned with ſmall yellow Flowers, cloſely ranged on one Side of the Stalk, having a few very ſmall acute Leaves placed between them, ſituated on the oppoſite Side of the Stalk; the upper Lip of the Flower is entire, and the Petal obtuſe. It flowers in *June*, the Seeds ripen in Autumn.

The 4th Sort differs from the 3d, in having ſhorter Leaves, which end in acute Points, and no Indentures on their Edges; the Flowers are larger, and the upper Lip is divided into 3 Parts.

The 5th Sort hath long ſmooth veined Leaves at the Bottom; the Stalk is ſtrong, and riſes 2 Feet and a Half high, garniſhed with Leaves 5 Inches long, one and a Half broad, ending in acute Points; theſe have many longitudinal Veins, and are ſlightly ſawed on their Edges; the upper Part of the Stalk is adorned with large yellow Flowers, nearly of the Size of thoſe of the common Sort, the Brim having acute Points, and the upper Lip entire. This flowers and ripens its Seeds about the ſame Time as the former.

The 6th Sort hath narrow ſmooth Leaves, which are entire; the Stalk riſes near 3 Feet high, and puts out ſome ſlender Branches from the Side; the lower Part of the Stalks is garniſhed with narrow ſmall Leaves, 3 Inches long, and a third of an Inch broad; the Spike of Flowers terminate the Stalk, growing in a looſe Spike, with very few Leaves between the Flowers, and thoſe very ſmall; the Empalement is divided into 4 obtuſe Parts, the lower Lip extending much longer than the upper. The Flowers are of an Iron Colour, and appear in *June*.

The 7th Sort riſes with an upright Stalk, from 4 to almoſt 6 Feet high; the lower Part is garniſhed with Spear-ſhaped Leaves, which are 4 Inches long, and 1 broad in the Middle, leſſening gradually to both Ends;

theſe have ſeveral longitudinal Veins, and their upper Surface is ſpotted with black; the upper Part of the Stalk, for near 18 Inches, is cloſely adorned with Iron-coloured Flowers, ſhorter than thoſe of the former Sort, and the Rim of the under Lip is reflexed; between theſe Flowers are many long narrow Leaves, which ſtand out much beyond the Flowers, eſpecially on the lower Part of the Spike. It flowers the End of *June* and in *July*, and the Seeds ripen in Autumn.

The 8th Sort grows naturally in the *Canary Iſlands*, from whence the Seeds were firſt brought to *England*; and many of the Plants raiſed in the Biſhop of *London*'s Garden at *Fulham*, Part of which were ſent to the Royal Gardens at *Hampton Court*, and ſome were ſent over to the Gardens in *Holland*: Thoſe ſent to *Hampton Court*, were preſerved a few Years, but by the Ignorance of the Gardeners, to whoſe Care they were committed, theſe, with many other valuable Plants, were deſtroyed.

This Plant hath a ſhrubby Stalk which riſes 4 Feet High, dividing into ſeveral Branches, garniſhed with rough Spear-ſhaped Leaves near 5 Inches long, and one and a Half broad in the Middle, gradually decreaſing to both Ends, having a few ſhort Serratures on their Edges; theſe are placed alternately on the Branches; each of theſe Branches is terminated by a looſe Spike of Flowers, about 4 Inches in Length, the Empalement is cut into 5 acute Segments almoſt to the Bottom; the upper Lip is long and entire, this is arched, and immediately under it the Stamina and Style are ſituated; the lower Lip is obtuſe, and indented at the Top; there are two acute Segments on the Side, which compoſe the Chaps of the Flower; there are 2 of the Stamina longer than the other; theſe are crowned with roundiſh Summits. In the Bottom of the Flower is the Germen, ſupporting a ſlender Style, crowned by an oval Stigma; the Germen becomes an oval Capſule, filled with ſmall angular Seeds.

This Sort begins to flower in *May*, and there is generally a Succeſſion of Flowers on the ſame Plant, till Winter puts a Stop to them, which renders the Plant more valuable. It is propagated by Seeds, which ſhould be ſown in Pots filled with light Earth, in Autumn, ſoon after the Seeds are ripe; theſe Pots ſhould be plunged into an old Bed of Tanners Bark, whoſe Heat is gone, and in mild Weather the Glaſſes ſhould be drawn off to admit the Air; but in hard Rains and Froſt they muſt be kept on, to protect the Seeds from both, which frequently deſtroys them when they are expoſed; in Spring the Plants will come up, when they ſhould enjoy the free Air in mild Weather, but muſt be protected from Cold. When theſe are large enough to tranſplant, they ſhould be each planted into a ſmall Pot filled with light Earth, and placed under the Frame till they have taken new Root, then they ſhould be gradually inured to the open Air. During the Summer Seaſon the Plants ſhould remain abroad in a ſheltered Situation, but in the Winter they muſt be placed in a Green-houſe, for they will not live abroad: They muſt not be kept too warm and cloſe in the Houſe, for they only want Protection from Froſt; therefore in mild Weather, they ſhould have free Air conſtantly admitted to them, and require frequent Waterings, but they ſhould not have it in too great Plenty in Winter.

The 9th Sort grows naturally in *Tartary*, and the Seeds were ſent to the Imperial Garden at *Peterſburgh* from whence I received them. This Plant hath many oval Spear-ſhaped Leaves, which are ſmooth, ariſing from the Root; between theſe ariſe the Stalk, which grows about a Foot high, garniſhed below with ſmooth Spear-ſhaped Leaves, from 4 to 5 Inches long, and one and a Half broad in the Middle, leſſening gradually at both Ends; theſe have no Foot Stalks, but their Baſe embraces the Stalks half round; the upper Part of the Stalk is adorned by a ſhort looſe Spike of yellow Flowers, almoſt as large as thoſe of the great yellow Sort beforementioned, but ſhorter. This flowers in *May*, and the Seeds ripen in Autumn.

All theſe Sorts ſhould be ſown in Autumn, for if the Seeds are ſown in Spring, they commonly fail, or at leaſt lie a whole Year in the Ground before they vegetate. The Plants are biennial (except the 8th Sort) and periſh ſoon after their Seeds are ripe.

DIOSCOREA. *Plum. N. Lin. Gen. Pl.* 995.

The *Characters* are,

It hath male and female Flowers in different Plants, the male Flowers have a Bell-ſhaped Perianthium of one Leaf cut into 6 *Parts, but have no Petals or Empalement; they have* 6 *ſhort hairy Stamina, terminated by ſingle Summits. The female Flowers have the ſame Perianthium as the male; they have no Petals, but have a ſmall* 3 *cornered Germen, ſupporting* 3 *Styles, crowned by ſingle Stigmas; the Perianthium becomes a triangular Capſule with* 3 *Cells, opening with* 3 *Valves, containing* 2 *compreſſed bordered Seeds in each.*

The *Species* are,

1. DIOSCOREA *foliis cordatis alternis, caule lævi. Hort. Cliff.* 459. *Dioſcorea* with Heart-ſhaped Leaves placed alternate and a ſmooth Stalk. This is the *Dioſcorea ſcandens, foliis tamni fructu racemoſo. Plum. Nov. Gen.* 9. Climbing *Dioſcorea* with black Briony Leaves and Fruit growing in long Bunches.

2. DIOSCOREA *foliis haſtato-cordatis, caule lævi, racemis longiſſimis. Dioſcorea* with Spear-pointed, Heart-ſhaped Leaves, a ſmooth Stalk, and very long Bunches of Flowers. This is the *Dioſcorea ſcandens, fructu racemoſo. Houſt. Mſſ.* Climbing *Dioſcorea* with Fruit growing in Bunches.

3. DIOSCOREA *ſcandens, folio ſubrotundo acuminato fructu racemoſo. Houſt. Mſſ.* Climbing *Dioſcorea* with a roundiſh pointed Leaf and Fruit growing in long Bunches.

4. DIOSCOREA *foliis cordatis, caule alato bulbifera. Flor. Zeyl.* 360. *Dioſcorea* with Heart-ſhaped Leaves and a winged Stalk bearing Bulbs. This is the *Volubilis nigra, radice albâ aut purpureâ maxima tuberoſa eſculenta, caule membranulis extantibus alato, folio cordato nervoſo. Sloan. Cat. Jam.* 46. The Yam or *Yammes*.

5. DIOSCOREA *foliis cordatis acuminatis, nervis lateralibus ad medium folii terminatis. Flor. Virg.* 121. *Dioſcorea* with Heart-ſhaped Leaves ending in acute Points, and lateral Veins terminating in the Middle of the Leaves.

The 1ſt Sort grows naturally in moſt of the Iſlands in the *Weſt-Indies*, I received the Seeds from *Jamaica*, where the late Dr. *Houſtoun* found it growing plentifully. This hath ſlender climbing Stalks, which fix themſelves to any Support near them, and riſe to the Height of 18 or 20 Feet; theſe are garniſhed with Heart-ſhaped Leaves ending with acute Points, and have 5 longitudinal Veins, which ariſe from the Foot Stalk, and diverge toward the Sides, but meet again at the Point of the Leaves. They ſtand upon pretty long Foot Stalks; from the Baſe of which ariſe the branching Spikes of Flowers, which are ſmall, and have no Beauty; the female Flowers are ſucceeded by 3 cornered oblong Capſules, having 3 Cells, each containing 2 compreſſed Seeds.

The 2d Sort differs from the firſt in the Shape of their Leaves, theſe having 2 round Ears at their Baſe but the Middle extends to an acute Point, like that of an Halbert. The Bunches of Flowers are longer, and they are looſer placed than thoſe of the former Sort.

The 3d Sort hath broad round Heart-ſhaped Leaves, which end in acute Points; theſe have many longitudinal Veins which ariſe from the Foot Stalk, and diverge to the Side, but afterward join at the Point of the Leaf; the Flowers come out on long looſe Strings ſtanding on ſhort Foot Stalks; the female Flowers are ſucceeded by 3 cornered oblong Capſules with 3 Cells having compreſſed bordered Seeds.

The 4th Sort hath triangular winged Stalks, which trail upon the Ground and extend a great Length; theſe frequently put out Roots from their Joints, as they lie on the Ground, whereby the Plants are multiplied. The Roots are eaten in many Parts of both *Indies*, where the Plants are much cultivated.

The 5th Sort grows naturally in *Virginia* and in other Parts of *North America*; this hath a ſmooth Stalk which climbs on the neighbouring Plants, and riſes 5 or 6 Feet high, garniſhed with Heart-ſhaped Leaves, placed ſometimes alternate, and at others, oppoſite; they are covered with ſmall Hairs, and have ſeveral longitudinal Veins. The Flowers come out from the Side of the Stalk as the other Sorts, but have no Beauty. Theſe Plants are preſerved in ſome curious Botanic Gardens, for Variety, but having no Beauty, few Perſons allow them a Place, eſpecially as all the Sorts except the laſt, require a good Stove to preſerve them through the Winter in *England*.

Theſe Plants may be propagated by laying their Branches into the Ground, which in 3 Months will put out Roots, and may then be taken from the old Plants, and planted in ſeparate Pots, which ſhould be plunged into the Tan Bed in the Stove; during Winter theſe Plants ſhould have but little Water, but in Summer when they are growing vigorouſly, they ſhould be watered 3 or 4 times a Week, and in warm Weather the Glaſſes ſhould be opened to admit a large Share of free Air. Theſe Plants rarely flower in *England*, but when the Seeds are ſent from *America*, they ſhould be immediately ſown in Pots and plunged into a hot Bed, where if the Seeds are ſown early in Spring the Plants will come up the ſame Seaſon, but when ſown late, they often remain in the Ground till the following Spring before they vegetate; therefore when the Plants do not come up the firſt Seaſon, the Pots ſhould be ſcreened from Froſt in Winter, and put into a new hot Bed in Spring, which will bring them up, if the Seeds were good.

The 4th Sort is much cultivated in the Iſlands of *America*, and is of great Uſe for feeding the Negroes; the white People make Puddings of their Roots, when ground to a Sort of Flour. This Plant is ſuppoſed to have been brought from the *Eaſt* to the *Weſt-Indies*; for it has not been diſcovered to grow wild in any Part of *America*; but in the Iſland of *Ceylon*, and on the Coaſt of *Malabar*, it grows in the Woods, and there are in thoſe Places a great Variety of Sorts.

The Sort chiefly cultivated in the *Weſt-Indies*, has a Root as big as a Man's Leg, of an irregular Form, and a dirty brown Colour on the Outſide; but when cut, it is white and meally within. The Stalks are triangular and winged; the Leaves are Heart-ſhaped, having two Ears, ſomewhat like thoſe of *Arum*. Theſe Stalks climb to the Height of 10 or 12 Feet, when they grow near Trees or Shrubs, to which they faſten themſelves, otherwiſe they trail upon the Ground.

This Plant is propagated by cutting the Root in Pieces, obſerving to preſerve an Eye or Bud to each, as practiſed in planting Potatoes; each of theſe being planted will grow, and produce 3 or 4 large Roots: In *America* they are commonly 6 or 8 Months in the Ground before the Roots are taken up for Uſe. The Roots are roaſted or boiled, and eaten by the Inhabitants; and ſometimes made into Bread.

In ſome curious Gardens this Plant is preſerved for Variety; but it is ſo tender as not to live in *England*, unleſs placed in a warm Stove; as theſe Roots are frequently brought from *America*, ſo whoever hath an Inclination to ſee the Plant, may cut them in the Manner before deſcribed; and plant each Piece in a Pot filled with freſh Earth, plunge them into a hot Bed of Tanner's Bark, and give them little Water until they ſhoot, leſt they ſhould rot. With this Management I have had the Shoots 10 Feet high; but the Roots have not grown to any great Size with me. This Plant will not thrive in the open Air, in the warmeſt Time of the Year; ſo muſt conſtantly be kept in the Bark Stove.

DIOSMA. *Lin. Gen. Plant.* 241. *Spiræa. Com. Rar. Plant.* 2. *African Spiræa vulgò.*

The *Characters* are,

The Flower hath a permanent Empalement, which is divided into 4 *acute Segments, plain at their Baſe; it hath* 5 *obtuſe Petals which ſpread open and are as long as the Empalement; it hath* 5 *Stamina terminated by oval erect Summits, and a* 5 *pointed, hollow Nectarium ſitting on the Germen, from which ariſes a ſingle Style, crowned by an obſolete Stigma. The Germen becomes a Fruit compoſed of* 5 *compreſſed Capſules, which open Lengthways, each incloſing one ſmooth oblong Seed.*

The *Species* are,

1. DIOSMA *foliis ſubulatis acutis oppoſitis. Hort. Cliff. Dioſma* with acute Awl-ſhaped Leaves placed oppoſite. This is the *Spiræa Africana, foliis cruciatim poſitis. Com. Rar. African Spiræa* with Leaves in Form of a Croſs.

2. DIOSMA *foliis linearibus hirſutis. Hort. Cliff.* 71. *Dioſma* with narrow hairy Leaves. This is the *Spiræa African odorata, foliis piloſis. Com. Rar. Plant.* 3. *Tab.* 3. Sweet *African Spiræa* with hairy Leaves.

3. DIOSMA *foliis linearibus acutis glabris, ſubtus bifarium punctatis. Lin. Sp. Plant.* 198. *Dioſma* with ſmooth narrow acute Leaves, ſpotted on their under Side. *Spiræa Africana odorato, floribus ſuaverubentibus. Com. R. Pl.* Sweet *African Spiræa* with ſoft red Flowers.

4. DIOSMA *foliis lineari-lanceolatis ſubtus convexis, bifariam*

fariàm imbricatis. Lin. Sp. Plant. 198. *Dioſma* with narrow Spear-ſhaped Leaves, convex on their under Side and imbricated two Ways. This is the *Spiræa Africana ericæ bacciferæ foliis. Raij. Hiſt.* 91. *African Spiræa* with Leaves like the Berry bearing Heath.

The 1ſt Sort riſes to the Height of 3 Feet; the Branches are very long and ſlender, and are produced from the Stem very irregularly: the Leaves are placed Croſſways, and are pointed; theſe are every Evening cloſed up to the Branches: The Flowers are produced along the Branches from between the Leaves; and in the Evening, when theſe Flowers are expanded, and the Leaves are cloſely embracing the Stalks, the whole Plant appears, as if covered with Spikes of white Flowers; and as theſe Plants continue a long Time in Flower, they make a fine Appearance when the Plants are intermixed with other Exoticks in the open Air.

The 2d Sort has been long known under the Title of *Spiræa Africana odorata, foliis piloſis*, or Sweet-ſcented *African Spiræa*, with hairy Leaves. This Sort makes a very handſome Shrub, growing to the Height of 5 or 6 Feet: The Stalks are of a fine Coral Colour; the Leaves come out alternately on every Side of the Branches, which are narrow-pointed and hairy: The Flowers are produced in ſmall Cluſters at the End of the Shoots, which are ſmall and white; theſe are ſucceeded by ſtarry Seed Veſſels, having 5 Corners, like thoſe of the ſtarry Aniſe, each of theſe Corners is a Cell, having one ſmooth ſhining oblong black Seed: Theſe Seed Veſſels abound with a Reſin, which affords a grateful Scent, as doth alſo the whole Plant.

The 3d Sort is of humbler Growth than either of the former, ſeldom riſing above 2 Feet high, and ſpreads into many Branches; the Leaves are ſmooth, and reſemble thoſe of the Heath; and the Plant from thence had the Name of *Erica Æthiopica*, &c. given it by Dr. *Plukenet:* The Flowers are produced in Cluſters, at the End of the Branches, like thoſe of the 2d Sort; but are ſmaller, and the Bunches not ſo large.

All theſe Plants are propagated by Cuttings, which may be planted during any of the Summer Months, in Pots filled with light freſh Earth, and plunged in a moderate hot Bed, where they ſhould be ſhaded in the Day Time from the Sun, and frequently refreſhed with Water; in about 2 Months the Cuttings will have taken Root, when they ſhould be each tranſplanted into a ſmall Pot, and placed in a ſhady Situation until the Plants have taken freſh Root, when they may be placed among other exotick Plants, in a ſheltered Situation: Theſe Plants may remain abroad until the Beginning of *October* or later, if the Seaſon continues favourable; for they only require to be ſheltered from Froſt; ſo that in a dry airy Green-houſe they may be preſerved very well in Winter; and in Summer, expoſed to the open Air with other Green-houſe Plants.

Theſe Plants grow naturally at the *Cape of Good Hope*, from whence the Seeds were ſent to *Europe*, where ſome of the Species have been long preſerved in the Gardens of the Curious.

The 2d Sort frequeutly ripens Seeds in *England*; but if they are not ſown ſoon after ripe, they rarely grow; and theſe commonly lie a whole Year in the Ground.

DIOSPYROS. *Lin. Gen. Plant.* 1027. *Guaiacana. Tourn. Inſt. R. H.* 600. The *Indian* Date Plumb.

The *Characters* are,

It hath hermaphrodite and female Flowers on the ſame Plant, and male Flowers on ſeparate Plants; the hermaphrodite Flowers have a large obtuſe permanent Empalement of one Leaf, divided into 4 *Parts; the Flower hath one Petal, ſhaped like a Pitcher, and cut at the Brim into* 4 *Segments which ſpread open; it hath* 8 *ſhort briſtly Stamina firmly joined to the Empalement terminated by oblong Summits which have no Farina. In the Center is ſituated a roundiſh Germen, ſupporting a ſingle quadrifid Style crowned by an obtuſe bifid Stigma; the Germen becomes a large globular Berry with many Cells, each including one oblong compreſſed hard Seed. The male Flowers have a one leaved Empalement, cut into ſmall acute Segments; the Petal is thick and four cornered, cut into* 4 *obtuſe Segments which turn backward; they have* 8 *ſhort Stamina terminated by long acute twin Summits, but have no Germen.*

The *Species* are,

1. DIOSPYROS *foliorum paginis diſcoloribus. Lin. Sp. Plant.* 1057. *Dioſpyros*, with the Surface of the Leaves of two Colours. This is the *Guaiacana. J. B.* 2. 138. The *Indian* Date Plumb.

2. DIOSPYROS *foliorum paginis concoloribus. Lin. Sp. Plant.* 1057. *Dioſpyros* with the Surface of the Leaves of one Colour. This is the *Guaiacana Virginiana Piſhamin dicta. Boerh. Ind. alter.* 2. The Piſhamin or Perſimon, and by ſome Pitchumon Plumb.

The 1ſt Sort is ſuppoſed to be a Native of *Africa*; and was tranſplanted from thence into ſeveral Parts of *Italy*, and alſo the South of *France*. The Fruit of this Tree is by ſome ſuppoſed to be the *Lotus*, which *Ulyſſes* and his Companions were inchanted with. This is a Tree of a middling Growth in the warm Parts of *Europe*, where there are ſeveral of them upward of 30 Feet high; but particularly in the Botanick Garden at *Padua* there is one very old Tree, which has been deſcribed by ſome of the former Botaniſts, under the Title of *Guaiacum Patavinum*. This Tree produces Plenty of Fruit every Year; from the Seeds of which many Plants have been raiſed. In *England* there are none of theſe Trees, but what have been raiſed within a few Years paſt, in the Phyſick Garden at *Chelſea*; for the Seeds of which I was obliged to his Excellency the Chevalier *Rathgeb*, his Imperial Majeſty's Miniſter at *Venice*; who has alſo ſupplied me with many other curious Plants, Trees, and Fruits, from different Parts of the World; where his extenſive Correſpondence has been employed to collect whatever rare Plants he could procure; and his Generoſity in communicating what Seeds and Plants he can procure to the Phyſick Garden at *Chelſea*, requires this publick Acknowledgement.

The 2d Sort is a Native of *America*; but particularly in *Virginia* and *Carolina* great Plenty of theſe Trees grow in the Woods. The Seeds are frequently brought to *England*, where the Trees are now become pretty common in the Nurſeries about *London*. This riſes to the Height of 12 or 14 Feet; but generally divides into many irregular Trunks near the Ground; ſo that it is very rare to ſee a handſome Tree of this Sort. This produces Plenty of Fruit in *England*; but they never come to Perfection:

In *America* the Inhabitants preſerve the Fruit until it be rotten (as is practiſed by Medlars in *England*,) when they are eſteemed a pleaſant Fruit.

Theſe are both propagated by Seeds, which come up very well in the open Ground; but if ſown on a moderate hot Bed, the Plants will come up much ſooner, and make a greater Progreſs; but in this Caſe the Seeds ſhould be ſown in Pots or Boxes of Earth, and plunged into the hot Bed; becauſe the Plants will not bear tranſplanting till Autumn, when the Leaves fall off; ſo that when the Plants are up, and have made ſome Progreſs, they may be inured by Degrees to the open Air; and in *June* they may be wholly expoſed, and may remain abroad until *November*; when it will be proper to ſet the Pots under a hot Bed Frame to protect them from hard Froſt, which, while they are very young, may kill the Tops of the Plants; but they muſt have as much free Air as poſſible in mild Weather: The following Spring, before the Plants begin to ſhoot, they ſhould be tranſplanted into a Nurſery in a warm Situation; where they may be trained up for 2 Years, and then removed to the Places where they are deſigned to remain. Theſe are both hardy enough to reſiſt the greateſt Cold of this Country, after the Plants have acquired Strength.

DIPSACUS. *Lin. Gen. Plant.* 107. *Tourn. Inſt.* The Teazel; in *French*, *Chardon à Bonnetier*.

The *Characters* are,

It hath many Flowers collected in one common Perianthium, which is permanent; the Flowers have but one Petal, which is tubular, and cut into 4 Parts at the Top, which are erect. They have 4 hairy Stamina as long as the Petal, terminated by proſtrate Summits; the Germen is ſituated below the Flower ſupporting a ſlender Style, crowned by a ſingle Stigma. The Germen becomes a Column-ſhaped Seed, incloſed in the common conical Fruit, which is divided by long prickly Partitions.

The *Species* are,

1. Dipsacus *foliis ſeſſilibus ſerratis, ariſtis fructibus erectis. Teazel* with ſawed Leaves ſet cloſe to the Stalks and erect Beards to the Fruit. This is the *Dipſacus ſylveſtris. Dod. Pempt.* 735. Wild *Teazel.*

2. Dipsacus *foliis connatis, ariſtis fructibus recurvis. Teazel* with Leaves joined at their Baſe, and the Beards of the Fruit recurved. This is the *Dipſacus ſativus. Dod. Pempt.* 735. Cultivated *Teazel.*

3. Dipsacus *foliis connatis ſinuatis. Lin. Sp. Plant.* 97. *Teazel* with ſinuated Leaves joined at their Baſe. This is the *Dipſacus folio laciniato. C. B. P.* 385. *Teazel* with a laciniated Leaf.

4. Dipsacus *foliis petiolatis appendiculatis. Hort. Upſal.* 25. *Teazel* with Foot Stalks having Appendices. This is the *Dipſacus ſylveſtris, capitulo minore, ſ. Virga. Paſtoris minor. C. B. P.* 385. Wild *Teazel* with a ſmaller Head, or ſmaller Shepherd's Rod.

The 1ſt of theſe is very common on dry Banks, in moſt Parts of *England*; and is ſeldom cultivated.

The 4th Sort grows naturally in many Places near *London*, and is rarely admitted into Gardens.

The 3d Sort grows naturally in *Alſace*, and is kept in Botanick Gardens for Variety, this differs from the wild *Teazel* in having the Leaves deeply cut and jagged.

But it is the 2d Sort only which is cultivated for Uſe, which is called *Carduus Fullorum*, or *Fullonum*, being of ſingular Uſe in raiſing the Knap on Woollen Cloth; for which Purpoſe there are great Quantities of this Plant cultivated in the Weſt Country.

This Plant is propagated by ſowing the Seeds in *March*, upon a Soil that has been well dried: About one Peck of this Seed will ſow an Acre: for the Plants ſhould have Room to grow, otherwiſe the Heads will not be ſo large, nor in ſo great Quantity. When the Plants are come up, you muſt hoe them as is practiſed for Turneps, cutting down all the Weeds, and ſingling out the Plants to about 6 or 8 Inches Diſtance; and as they advance, and the Weeds begin to grow again, you muſt hoe them a 2d Time, cutting out the Plants to a wider Diſtance; for they ſhould be, at laſt, left at leaſt a Foot aſunder: And you ſhould be particularly careful to clear them from Weeds, eſpecially the firſt Summer; for when the Plants have ſpread ſo as to cover the Surface of the Ground, the Weeds will not ſo readily grow between them. The 2d Year after ſowing, the Plants will ſhoot up Heads, which will be fit to cut about the Beginning of *Auguſt*; at which Time they ſhould be cut, and tied up in Bunches, ſetting them in the Sun, if the Weather be fair; but if not, they muſt be ſet in Rooms to dry them. The common Produce is about 160 Bundles or Staves upon an Acre, which they ſell for about one Shilling a Stave. Some People ſow Caraway and other Seeds amongſt their Teazels; but this is not a good Method; for the one ſpoils the other; nor can you ſo eaſily clear them from the Weeds, as when alone. Dr. *Linnæus* ſuppoſes this to be only a ſeminal Variety of the common wild Teazel; but I have cultivated both the Sorts more than thirty Years, and have never found either of them alter.

DITTANY, the white. *See* Dictamnus.

DOCK. *See* Lapathum.

DODARTIA. *Lin. Gen. Plant.* 698. *Tourn. Cor.*

The *Characters* are,

The Flower hath a permanent Empalement of one Leaf, Bell-ſhaped, and cut into 5 Parts at Top; the Flower hath one Petal, is ringent, having a cylindrical diflexed Tube much longer than the Empalement; the upper Lip riſes and is indented, the lower Lip ſpreads open and is trifid, the middle Segment being narrow. It hath 4 Stamina which incline to the upper Lip, two of which are ſhorter than the other; they are terminated by ſmall roundiſh Summits. In the Center is a round Germen, ſupporting an Awl-ſhaped Style, crowned by a bifid obtuſe Stigma. The Germen becomes a globular Capſule with 2 Cells filled with ſmall Seeds.

The *Species* are,

1. Dodartia *foliis linearibus integerrimis glabris. Lin. Sp. Plant.* 633. *Dodartia* with very narrow ſmooth entire Leaves. This is the *Dodartia Orientalis, flore purpuraſcente. Tourn. Cor.* 47. Eaſtern *Dodartia* with a purpliſh Flower.

2. Dodartia *foliis radicalibus oblongo-ovatis, ſerratis, caulinis linearibus integerrimis floribus ſpicatis terminalibus. Dodartia* with oblong, oval, ſawed Leaves at the Bottom, thoſe on the Stalks, narrow and entire, and Flowers growing in Spikes at the End of the Stalks. This is the *Linaria bellidis folio. C. B. P.* 212. Toad Flax with a Daiſy Leaf.

The 1ſt Sort was diſcovered by Dr. *Tournefort* near

Mount *Ararat* in *Armenia*, from whence he ſent the Seeds to the Royal Garden at *Paris*, where they ſucceeded, and from thence moſt of the curious Gardens in *Europe* have been ſupplied with it. This Plant having Characters which are different from all thoſe of *Tournefort*'s Inſtitutions, he conſtituted this Genus, and gave it the Title from Monſieur *Dodart*, Member of the Royal Academy of Sciences at *Paris*, and Phyſician to Her Royal Highneſs the Princeſs of *Conti*.

It hath a perennial Root which creeps far under the Surface, and ſends out new Stalks at a great Diſtance from the Parent Plant; theſe Stalks are firm, a little compreſſed, and grow a Foot and a Half high, ſending out ſeveral Side Branches; theſe are garniſhed with long fleſhy narrow Leaves placed oppoſite, of a deep green Colour; thoſe on the lower Part of the Stalk are ſhorter and broader than thoſe above, and have 2 or 3 ſharp Indentures on their Edges, but thoſe on the upper Part of the Stalk are entire; and at theſe Joints the Flowers come out ſingly, on each Side the Stalk ſitting cloſe to it; theſe are near an Inch long, the Bottom is tubulous, but divides into 2 Lips above, the upper Lip is hollow like a Spoon, the convex Side ſtanding upward, and is divided into 2 Parts, the lower Lip is divided into 3 Parts, the Middle being the narroweſt. The Flower is of a deep purple Colour, and appears in *July*, and is rarely ſucceeded by Seeds in *England.* It propagates very faſt by its creeping Roots, ſo that when it is once eſtabliſhed in a Garden, it will multiply faſt enough; it loves a light dry Soil, and may be tranſplanted either in Autumn when the Stalks decay; or in Spring before the new Stalks ariſe.

The 2d Sort is a biennial Plant, which periſhes ſoon after the Seeds are ripe; this ſends out from the Root ſeveral oblong Leaves, near 4 Inches long, narrow at their Baſe, but increaſes in Width upward, where it is about an Inch broad, rounded at the End, and deeply ſawed on the Edges; between theſe ariſe the Stalks which grow a Foot high, their lower Parts being garniſhed with Leaves of the ſame Form as the lower Leaves, but much ſmaller, the upper Leaves are very narrow and entire. The Flowers grow in Spikes on the Top of the Stalks, they are very ſmall and white, but ſhaped like thoſe of the former Sort.

This is propagated by Seeds, which ſhould be ſown in Autumn ſoon after they are ripe, upon a Border of light Earth, where they are deſigned to remain. When the Plants appear the following Spring, they muſt be thinned, and kept clean from Weeds, which is all the Culture they require; the 2d Year they will flower and ſeed, after which the Plants decay; when the Seeds are ſown in Spring the Plants never come up the ſame Year.

DOG's TOOTH. *See* Erythronium.

DOG-WOOD. *See* Cornus.

DORIA. *See* Solidago & Othonna.

DORONICUM. *Lin. Gen. Plant.* 862. *Tourn. Inſt. R. H.* 487. *Tab.* 277. Leopard's Bane.

The *Characters* are,

It hath a Flower compoſed of ſeveral hermaphrodite Florets, which are ſituated in the Center, and form the Diſk, and of female Florets which compoſe the Rays; theſe are included in one common Empalement, which hath a double Series of Leaves, as long as the Rays. The hermaphrodite Florets are Funnel-ſhaped and cut into 5 *Parts at Top; theſe have* 5 *ſhort hairy Stamina, terminated by cylindrical Summits. In the Bottom is ſituated the Germen ſupporting a ſlender Style crowned by an indented Stigma; the Germen becomes a ſingle oval compreſſed Seed crowned with hairy Down. The female Flowers are formed like a Tongue ſpread out, and compoſe the Border; theſe have a a Germen ſupporting a Style crowned by* 2 *reflexed Stigmas, but have no Stamina; the Germen becomes a ſingle furrowed Seed covered with a hairy Down.*

The *Species* are,

1. DORONICUM *foliis cordatis obtuſis, radicalibus petiolatis, caulinis amplexicaulibus. Lin. Mat. Med.* 394. Leopard's Bane with obtuſe Heart-ſhaped Leaves, thoſe from the Root having Foot Stalks, and thoſe above embracing the Stalks. This is the *Doronicum maximum. C. B. P.* 184. Greateſt Leopard's Bane.

2. DORONICUM *foliis ovatis acutis, ſubdentatis, ramis alternis. Hort. Cliff.* 411. Leopard's Bane with oval pointed leaves, indented at Bottom, and alternate Branches. This is the *Doronicum plantaginis folio. C. B. P.* 184. Leopard's Bane with a Plantain Leaf.

3. DORONICUM *foliis lanceolatis, denticulatis, ſubtus tomentoſis, caule unifloro. Prod. Leyd.* 160. Leopard's Bane with Spear-ſhaped indented Leaves, woolly on their under Side and one Flower on a Stalk. This is the *Doronicum Helveticum incanum. C. B. P.* 185. Hoary *Helvetian* Leopard's Bane.

4. DORONICUM *caule nudo ſimpliciſſimo unifloro. Hort. Cliff.* Leopard's Bane with a naked ſingle Stalk having one Flower. This is the *Bellis ſylveſtris media caule carens. C. B. P.* Middle wild Daiſy having no Stalk.

The 1ſt Sort grows naturally in *Hungary* and on the *Helvetian* Mountains, but is frequently preſerved in the *Engliſh* Gardens. It hath thick fleſhy Roots divided into many Knots or Knees, ſending out ſtrong fleſhy Fibres, which penetrate deep into the Ground, and from theſe ariſe in Spring, a Cluſter of Heart-ſhaped Leaves, which are hairy, and ſtand upon Foot Stalks; between theſe ariſe the Flower Stalks, which are channeled and hairy, growing near 3 Feet high, putting out one or two ſmaller Stalks from the Side, which grow erect, and are garniſhed with one or two Heart-ſhaped Leaves cloſely embracing the Stalks with their Baſe; each Stalk is terminated by one large yellow Flower, compoſed of about 24 Rays or female Florets, which are about an Inch long, plain, and indented in 3 Parts at the Top. In the Center is ſituated a great Number of hermaphrodite Florets, which compoſe the Diſk; theſe are tubulous and ſlightly cut at the Top in 5 Parts. The Flowers appear in *May*, and are ſucceeded by Seeds, which ripen in *July*; theſe are crowned by a hairy Down, which ſerves to convey them to a Diſtance.

This Plant multiplies very faſt by its ſpreading Roots and if the Seeds are permitted to ſcatter, they will produce Plants wherever they happen to fall, ſo that it becomes a Weed where it is once eſtabliſhed; it loves a moiſt Soil and a ſandy Situation.

The 2d Sort hath oval Leaves ending in acute Points, theſe are indented on their Edges toward their Baſe, but their upper Parts are entire; the Stalks riſe about 2 Feet high and each is terminated by a large yellow Flower, like thoſe of the former Sort; the Stalks have

2 or 3 Leaves, which are placed alternately, and their Baſe ſits cloſe to the Stalks, theſe are not ſo hairy as thoſe of the former Sort; it flowers about the ſame Time with that, and the Seeds ripen well in *England*. This grows naturally in *Portugal*, *Spain*, and *Italy*, but is equally hardy with the firſt, and multiplies in as great Plenty; the Root is perennial.

The 3d Sort hath longer Leaves than either of the former, covered with a hoary Down on their under Side, and indented on their Edges; the Stalks are ſingle and have ſeldom more than one Leaf on each; theſe grow a Foot and Half high, and are terminated by a ſingle Flower on the Top, like thoſe of the former Sorts. This grows naturally on the *Pyrenees* and *Helvetian* Mountains. It delights in a moiſt Soil and ſhady Situation, and propagates in Plenty either from Seeds or by parting the Roots; it flowers and Seeds about the ſame Time with the former.

The 4th Sort grows naturally on the *Alps* and *Pyrenean* Mountains; this hath a perennial Root, the Leaves are like thoſe of the leſſer Daiſy, but longer, and not ſo broad. The Flower grows on a naked Foot Stalk, near a Foot long; the Roots ſeldom ſend out more than 1 Stalk; the Rays are white, and very like thoſe of the common Daiſy; the Diſk is yellow, and is compoſed of hermaphrodite Flowers.

This Plant is preſerved in Botanic Gardens for Variety, but the Flowers make little better Appearance than thoſe of the common Field Daiſy, only they ſtand on much taller Foot Stalks. It muſt have a ſhady Situation, and a moiſt Soil, otherwiſe it will not thrive in this Country; it is propagated by parting the Roots for the Seeds do not ripen well in *England*. I received this from *Verona*, near which Place it grows naturally.

The Roots of the 1ſt Sort, have been ſometimes uſed in Medicine, ſome having commended it as an Expeller of the Poiſon of Scorpions, but others reckon it a Poiſon, and affirm that it will deſtroy Wolves and Dogs.

The other Sorts which have been formerly ranged under this Genus, are now ſeparated, and may be found under the Title *Arnica*.

DORSTENIA. *Plum. Nov. Gen.* 29. *Tab.* 8. *Lin. Gen. Plant.* 147. [This plant was ſo named by Father *Plumier*, from Dr. *Dorſten* a *German* Phyſician, who publiſhed a Hiſtory of Plants in Folio.] Contrayerva.

The *Characters* are,

It hath one common plain Involucrum ſituated vertically upon which ſit many ſmall Flowers as in a Diſk; theſe have no Petals, but 4 ſhort ſlender Stamina terminated by roundiſh Summits. In the Center is a roundiſh Germen, ſupporting a ſingle Style crowned by an obtuſe Stigma; the Germen becomes a ſingle Seed, incloſed in the common fleſhy Receptacle.

The *Species* are,

1. DORSTENIA *foliis ſinuatis obtuſis, placentâ ovali, marginibus integris.* Contrayerva with obtuſe ſinuated Leaves, and an oval Placenta with entire Borders. This is the *Dorſtenia ſphondylii folio, dentariæ radice. Plum. Nov. Gen.* 29. *Dorſtenia* with a low Parſnep Leaf, and a Toothwort Root.

2. DORSTENIA *foliis cordato-angulatis acutis, placentâ quadrangulari dentato.* Contrayerva with angular Heart-ſhaped acute Leaves, and a quadrangular Placenta which is indented. This is the *Dorſtenia dentariæ radice, folio minùs laciniato placentâ quadrangulari & undulatâ. Houſt. Mſſ.* Contrayerva with a Toothwort Root, a Leaf leſs cut, and a quadrangular waved Placenta.

3. DORSTENIA *foliis palmato-angulatis, angulis acutis, placentâ oblongâ tetragono.* Contrayerva with angular handed Leaves, whoſe Angles are very acute, and an oblong four cornered Placenta.

The 1ſt of theſe Plants was diſcovered near *Old Vera Cruz* in *New Spain*. The 2d on the rocky Grounds about *Campeachy*. The third Sort was found in great Plenty in the Iſland of *Tobago*. But the Roots of all theſe Species are indifferently brought over, and uſed in Medicine, and for Dying.

The 1ſt Sort ſends out ſeveral Leaves from the Root, which are about 4 Inches long, and as much in Breadth; theſe are deeply laciniated in 5 or 7 obtuſe Parts, ſtanding upon Foot Stalks near 4 Inches long; they are ſmooth, and of a deep green. The Stalk which ſupports the Placenta ariſes from the Root, and grows near 4 Inches high, upon which the fleſhy Placenta is vertically placed; this is of an oval Form about one Inch long, and three Quarters broad. Upon the upper Surface of this, the ſmall Flowers are cloſely ſituated, the fleſhy Part becoming an Involucrum to them; theſe are very ſmall, and ſcarce conſpicuous at a Diſtance, being of an herbaceous Colour.

The 2d Sort ſends out ſeveral angular Heart-ſhaped Leaves from the Root, which have Foot Stalks 8 or 9 Inches in Length and very ſlender; the Leaves are about 3 Inches and a Half long, and almoſt 4 broad at their Baſe, the two Ears having 2 or 3 Angles which are acute, and the Middle of the Leaves are extended and end in acute Points like a Halbert; theſe are ſmooth and of a lucid green; the Foot Stalk which ſuſtains the Placenta is 9 Inches long, and about half an Inch ſquare, and the upper Surface cloſely ſet with ſmall Flowers like the firſt.

The 3d Sort ſends out Leaves of different Forms, ſome of the lower are Heart-ſhaped having a few Indentures on their Edges, and ending in acute Points, but the larger Leaves are deeply cut like the Fingers on a Hand, into 6 or 7 acute Segments. Theſe Leaves are 5 Inches long, and 6 broad in the Middle, they are of a deep green, and ſtand upon long Foot Stalks. The Placenta is very thick and fleſhy, an Inch and a Half long, and three Quarters broad, having 4 acute Corners; theſe have a Number of ſmall Flowers placed on their upper Surface like the other Species.

Theſe Plants are at preſent very rare in *Europe*, nor was it known what the Plant was, whoſe Roots were imported, and had been long uſed in Medicine in *England*, until the late Dr. *Houſtoun* informed us: For although Father *Plumier* had diſcovered one Species of this Plant, and given the Name of *Dorſtenia* to the Genus; yet he ſeems not to have known, that the Contrayerva was the Root of that Plant.

It will be difficult to obtain theſe Plants, becauſe the Seeds are ſeldom to be found good; nor will they grow, if kept long out of the Ground; ſo that the only ſure Method to obtain them is, to have the Roots taken up when their Leaves begin to decay, and planted pretty cloſe in Boxes of Earth, which may be brought very ſafe to *England*; provided they are preſerved from Salt Water, and not over watered with freſh Water in their Paſſage. When the Plants arrive, they ſhould be tranſplanted each in a Pot filled with freſh Earth, and plunged into the Bark Stove, which ſhould be kept of a moderate Heat; the Plants muſt be frequently refreſhed with Water, during the Summer Seaſon; but in Winter, when the Leaves are decayed, it ſhould be given to them ſparingly. With this Management theſe Plants may not only be maintained, but may alſo be increaſed by parting their Roots in Spring, before the Plants put out their Leaves.

DORYCNIUM. *See* Lotus.

DOUGLASSIA. *Houſt. Gen. Nov.*

The *Characters* are,

The Flower has a ſhort tubulous Empalement indented in 5 Parts at the Brim; it has one Petal with a long incurved Tube, cut at the Top into 5 Segments which are equal and ſpread open; it has 5 very long Stamina, ſtanding out beyond the Petal, which are equal in Length, terminated by globular Summits, and a roundiſh Germen, ſupporting a ſlender Style, ſhorter than the Stamina, crowned by a roundiſh Stigma. The Germen becomes a roundiſh Capſule having 2 Cells, each including two hard Seeds.

The Title of this Genus was given by the late Dr. *Houſtoun*, in Honour of Dr. *James Douglaſs*, Phyſician to her late Majeſty Queen *Caroline*.

We know but one *Species* of this Genus, *viz.*

DOUGLASSIA. This is the *Pauliuro affinis liguſtrifolia ſpinoſa, flore monopetalo difformi, fructi ſicco ſubrotundo. Sloan. Hiſt. Jam.* 25. *Tab.* 166. *fig.* 2, 3. Dr. *Linnæus* titles it *Volkameria ſpinis petiolorum rudimentis, Sp. Plant.* 637. *Volkameria* with Spines formed from the Rudiments of the Foot Stalks.

This Plant grows naturally in the Iſlands of the *Weſt-Indies*; it has ſeveral ligneous Stalks, which riſe 10 or 12 Feet high, covered with a white Bark, and garniſhed with narrow Spear-ſhaped Leaves, about 2 Inches long, and half an Inch broad in the Middle, drawing to a Point at each End. There are 2 of theſe Leaves at each Joint which ſtand oppoſite, and ſeveral ſmaller of the ſame Shape which ariſe at the ſame Place, under which are placed two ſmall crooked Spines, which appear to be formed of the Rudiment of the Foot Stalks. The Flowers come out in ſmall Bunches upon long Foot Stalks, at the Wings of the Stalk, on each Side placed oppoſite, toward the End of the Branches, each Bunch containing 5 or 6 white tubulous Flowers upon ſhort Foot Stalks; they are white, having ſhort Tubes, cut into 5 obtuſe Segments which ſpread open, and in the Middle are 5 purple Stamina, which are 3 Times the Length of the Tube. The Germina, which are ſituated at the Bottom of the Tube, afterwards become a ſmall round dry Capſule having 2 Cells, each containing one hard Seed.

This Plant may be propagated by Cuttings in the ſame Way as the *Volkameria*; and as the Plants require the ſame Treatment, the Reader is deſired to turn to that Article for Directions to avoid Repeiiton.

Dr. *Linnæus* has ſuppoſed this, and the *Liguſtroides* of *Houſtoun* to be the ſame, but they are totally different in Species, if not in Genus; but as I have not ſeen the Flowers of the *Liguſtroides*, I cannot determine its Genus; for although there have been Plants of it in the *Chelſea* Garden more than 20 Years, yet they have not produced Flowers, although they are 12 or 14 Feet high.

DRABA. *Dillen. Gen. Lin. Gen. Alyſſon. Tourn. Inſt.*

The *Characters* are,

The Flower hath a four-leaved Empalement, which falls off. It hath 4 Petals placed in Form of a Croſs, and 6 Stamina, 4 of which are as long as the Empalement, the other 2 are much ſhorter and incurved; theſe are terminated by roundiſh Summits. In the Center is ſituated a bifid Germen, ſupporting a permanent Style, crowned by an oblong Stigma. The Germen becomes a very ſhort Capſule with 2 Cells, ſeparated by the ſwelling Style, which is oblique, and longer than the Capſule. The Valves are parallel to the Middle, and divide the lower Part of the Cell, from the upper, which is open, round, concave, and opens oblique, each Cell containing a ſingle Seed.

The *Species* are,

1. DRABA *ſcapo nudo ſimplici, foliis lanceolatis integerrimis. Fl. Lapp.* 255. *Draba* with a ſingle naked Stalk, and very entire Spear-ſhaped Leaves. This is the *Alyſſon Alpinum, hirſutum luteum, Tourn. Inſt.* 217. Yellow hairy *Alpine* Madwort.

2. DRABA *caulibus nudis, foliis inciſis. Hort. Cliff.* 333. *Draba* with naked Stalks and cut Leaves. *Alyſſon vulgare, polygoni folio, caule nudo. Tourn. Inſt.* Common Madwort with a Knot Graſs Leaf and naked Stalk.

3. DRABA *caule nudo, foliis pinnatis ternatiſque. Lin. Sp. Pl.* 642. *Draba* with a naked Stalk, and pinnated and trifoliate Leaves. This is the *Alyſſon pyrenaicum, perenne, minimum, foliis trifidis. Tourn. Inſt.* Leaſt perennial Madwort of the *Pyrenees* with trifid Leaves.

4. DRABA *caule ramoſo, foliis cordatis dentatis amplexicaulibus. Prod. Leyd.* 33. *Draba* with a branching Stalk, and Heart-ſhaped indented Leaves embracing the Stalks. This is the *Alyſſon veronicæ folio. Tourn. Inſt.* 217. Madwort with a Speedwell Leaf.

5. DRABA *caule ramoſo, foliis ovatis ſeſſilibus dentatis. Lin. Sp. Pl.* 643. *Draba* with a branching Stalk, and oval indented Leaves growing cloſe to the Branches. This is the *Alyſſon Alpinum, polygoni folio incano. Tourn. Inſt. Alpine* Madwort with a hoary Knot Graſs Leaf.

6. DRABA *foliis caulinis numeroſis incanis, ſiliculis obliquis. Flor. Suec.* 526. *Draba* with many hoary Leaves on the Stalks, and oblique Pods. *Lunaria ſiliquâ oblongâ intortâ Tourn.* Moonwort with an oblong intorted Pod.

The 1ſt Sort grows naturally on the *Alps*, and other mountainous Parts of *Europe*; this is a very low Plant, which divides into ſmall Heads, like ſome Sorts of Houſeleek, and from thence it was titled *Sedum Alpinum*, &c. or *Alpine* Houſeleek. The Leaves are ſhort, narrow, and very hairy; from each of theſe Heads come out a naked Flower Stalk an Inch and a Half high, terminated by looſe Spikes of yellow Flowers, having four obtuſe Petals placed in Form of a Croſs; when theſe fade, they are ſucceeded by triangular, or Heart-ſhaped Pods, which are compreſſed, and incloſe three or four roundiſh Seeds. It flowers in *March*, and the Seeds ripen the Beginning of *June*.

This Plant is eaſily propagated by parting the Heads; the beſt Time for doing this is in Autumn, becauſe it ſhoots up to flower very early in the Spring. It ſhould have a moiſt Soil and ſhady Situation, where it will thrive and flower annually It requires no other Culture but to keep it clean from Weeds.

The 2d Sort is an annual Plant, which grows naturally upon Walls, and dry Banks, in many Parts of *England*, ſo is never cultivated in Gardens. This flowers in *April*, and the Seeds ripen in *May*.

The 3d Sort grows naturally on the *Alps*, and other mountainous Parts of *Europe*. This is a low perennial Plant, which ſeldom riſes more than 2 Inches high; it has a ſhrubby Stalk, which divides into many ſmall Heads like the 1ſt Sort. The Leaves are ſmall, ſome of them are winged, have 5 ſhort narrow Lobes, placed on a Mid-rib, others have but three. The Flowers come out in Cluſters, ſitting cloſe to the Leaves. They are of a bright purple Colour, and appear early in Spring. This is a perennial Plant, which may be propagated by parting the Heads in the ſame Manner as the firſt, and requires the ſame Treatment.

The 4th Sort grows naturally in ſhady Woods in many Parts of *Europe*, and is but ſeldom kept in Gardens, unleſs for Variety. It is an annual Plant, riſing with an upright branching Stalk, about 10 Inches high, garniſhed with Heart-ſhaped indented Leaves, which embrace the Stalks with their Baſe. The Stalks are terminated by looſe Spikes of white Flowers, which appear the Beginning of *May*; in *June* the Seeds ripen, and the Plants ſoon after decay. If the Seeds are permitted to ſcatter, the Plants will come up without Trouble. It delights in a ſhady Situation and moiſt Soil.

The 5th Sort is an annual, which grows in ſhady Woods in the northern Parts of *Europe*. This is like the former Sort, but the Leaves are larger, rounder, and do not embrace the Stalks; the Flowers are yellow. If the Seeds are permitted to ſcatter, the Plants will maintain themſelves if they have a ſhady Situation.

The 6th Sort riſes with an upright Stalk, about a Foot high, the lower Part being very cloſely garniſhed by oblong hoary Leaves, which are indented on their Edges. The upper Part of the Stalk puts out 2 or 3 ſhort Branches; theſe are almoſt naked of Leaves, as is alſo the upper Part of the Stalk. The Flowers come out looſely on the Top of the Stalk; they are compoſed of 4 ſmall white Petals placed in Form of a Croſs, which are ſucceeded by oblong twiſted Pods containing 3 or 4 roundiſh compreſſed Seeds. It flowers in *June*, and the Seeds ripen in *July*. This grows naturally in the North of *England*, and in *Wales*.

This Plant ſeldom laſts more than 2 Years; if the Seeds are ſown in Autumn in a ſhady Border, the Plants will come up in Spring, or where they are permitted to ſcatter, the Plants will riſe without any Trouble.

DRACO ARBOR. *See* Palma.

DRACO HERBA. [*i. e.* Dragon's-wort.] Tarragon, *vulgò. See* Abrotanum.

DRACOCEPHALUM. *Lin. Gen. Plant.* 648. *Dracocephalon. Tourn. Inſt. R. H.* 181. *Tab.* 83. [of δράκων, a Dragon, and κεφαλὴ, a Head.] *i. e.* Dragon's Head.

The *Characters* are,

The Flower hath a ſhort permanent Empalement of one Leaf, which is tubulous. It hath one ringent Petal, with a Tube the Length of the Empalement, with large oblong inflated Chaps. The upper Lip is obtuſe and arched, the under Lip is trifid, the 2 Side Segments are erect, the Middle turns downward, and is indented. It hath 4 Stamina, ſituated near the upper Lip, 2 being ſhorter than the other, and are terminated by Heart-ſhaped Summits. It hath a four parted Germen, ſupporting a ſlender Style, ſituated with the Stamina, and crowned by a bifid reflexed Stigma. The Germen becomes 4 oval, oblong Seeds, incloſed in the Empalement.

The *Species* are,

1 DRACOCEPHALUM *foliis ſimplicibus, floribus ſpicatis Hort. Cliff.* 308. *American* Dragon's Head with ſingle Leaves and ſpiked Flowers. This is the *Dracocephalon Americanum. Breyn. P. American* Dragon's Head.

2. DRACOCEPHALUM *floribus ſpicatis, foliis compoſitis. Hort. Cliff.* Dragon's Head with ſpiked Flowers and compound Leaves. *Moldavica Americana trifolia odore gravi. Tourn. Inſt.* Three-leaved *American* Balm, having a ſtrong Smell, commonly called Balm of *Gilead.*

3. DRACOCEPHALUM *floribus verticillatis, foliis ovato-lanceolatis. H. C.* 308. Dragon's Head with Flowers growing in Whorls, and oval Spear-ſhaped Leaves. *Moldavica betonicæ folio, flore cæruleo. Tourn. Inſt. Moldavian* Balm, with a Betony Leaf, and blue Flower.

4. DRACOCEPHALUM *floribus verticillatis, foliis floralibus orbiculatis. Hort. Cliff.* 308. Dragon's Head with Flowers growing in Whorls, and the upper Leaves round. *Moldavica orientalis minima ocymifolio, flore purpuraſcente. Tourn. Cor.* 11. Leſſer Eaſtern *Moldavian* Balm with a Willow Leaf and a bluiſh Flower.

5. DRACOCEPHALUM *floribus verticillatis, bracteis oblongis, ſerraturis ſpinoſis, foliis tomentoſis. Hort. Up.* 166. Dragon's Head with Flowers growing in Whorls, and the little Leaves under the Flowers ſawed, ending in Spines, and woolly Leaves. *Moldavica orientalis betonicæ folio, flore magno violaceo. Tourn.* Eaſtern *Moldavian* Balm, with a Betony Leaf, and a large blue Flower.

6. DRACOCEPHALUM *floribus verticillatis, bracteis oblongis ovatis integerrimis, corollis majuſculis nutantibus. Hort. Up.* 167. Dragon's Head with Flowers growing in Whorls, the ſmall Leaves under the Flowers oblong and entire, and hanging Flowers much larger than the Empalement. *Moldavica betonicæ folio, floribus minoribus cæruleis pendulis. Amman. Moldavian* Balm with a Betony Leaf, and ſmaller blue pendulous Flowers.

7. DRACOCEPHALUM *floribus verticillatis, bracteis oblongis integerrimis, corollis vix calyce majoribus. Hort. Up.* 167. Dragon's Head with Flowers growing in Whorls, the ſmall Leaves oblong and intire, and the Flowers equal with the Empalement. *Moldavica betonicæ folio, floribus minimis pallidè cæruleis. Moldavian* Balm with a Betony Leaf, and very ſmall blue Flowers.

8. DRACOCEPHALUM *floribus verticillatis, bracteis ovatis, ſerraturis ſpinoſis, foliis lineari-lanceolatis.* Dragon's Head with Flowers growing in Whorls, oval *Bracteæ* having Spines at the Serratures, and very narrow Spear-ſhaped Leaves. *Moldavica orientalis, ſalicis folio, flore parvo cæruleo. Tourn. Cor.* 11. Eaſtern *Moldavian* Balm with a Willow Leaf, and a ſmall blue Flower.

9 DRACOCEPHALUM *floribus verticillatis foliis ovatis inciſo-crenatis, bracteis lanceolatis integerrimis. Lin. Sp. Plant.* 595. Dragon's Head with Flowers growing in

Whorls, oval Leaves which are cut and crenated, and Spear-ſhaped *Bracteæ*, which are entire.

The 1ſt Sort is a Native of *North America*, where it grows in the Woods, and by the Sides of Rivers. This Sort riſes with an upright Stalk, which is four-cornered, near 3 Feet high, garniſhed with Spear-ſhaped Leaves about 3 Inches long, and Half an Inch broad, ſitting cloſe to the Stalk; they are ſawed on their Edges, and placed by Pairs oppoſite at each Joint, and ſometimes there are 3 Leaves ſtanding round at the ſame Place. The Flowers grow in long Spikes on the Top of the Stalks; theſe are of a purple Colour, and make a pretty Variety among other hardy Plants, eſpecially if the Plants are ſtrong and vigorous. This is a perennial Plant which will live in the open Air, but requires a moiſt Soil, or ſhould be duly watered in dry Weather, otherwiſe the Leaves will ſhrink, and the Flowers make no Appearance. As this is hardy, it may be allowed a Place in ſhady Borders, ſince it will not ramble, or take up much Room. It flowers in *July*, and continues until the End of *Auguſt*, and is propagated by parting the Roots in Autumn.

The 2d Sort is a Native of the *Canary* Iſlands, and hath been long an Inhabitant in the Gardens; it is uſually called by the Gardeners Balm of *Gilead*, from the ſtrong reſinous Scent which the Leaves emit on being rubbed. This is a perennial Plant, which riſes with ſeveral ſquare Stalks, to the Height of 3 Feet or more, becoming ligneous at their lower Parts, and are garniſhed with compound Leaves at each Joint, which are placed oppoſite; theſe have 3 or 5 Lobes, which are oblong, pointed, and ſawed on their Edges. The Flowers come out in ſhort thick Spikes on the Top of the Stalks; theſe are of a pale blue Colour, and are ſucceeded by Seeds, which ripen very well in *England*. This Plant continues producing Flowers moſt Part of Summer, it is uſually kept in Green-houſes; but, in mild Winters, the Plants will live abroad, if they are planted in warm Borders; and thoſe Plants which are kept in Pots, will thrive much better when they are ſheltered under a Frame, than if placed in a Green-houſe, where the Plants are apt to draw up weak, for they ſhould have as much free Air as poſſible in mild Weather, and only require to be ſheltered from ſevere Froſt. This may be propagated by Seeds, which, if ſown in Autumn, will more certainly grow, than thoſe which are ſown in Spring, but if theſe are ſown in Pots, they muſt be ſheltered under a Frame in the Winter, and if the Plants do not come up the ſame Autumn, they will ariſe in Spring, but if the Seeds are ſown in the full Ground, it ſhould be in a warm Border; and in hard Froſt they ſhould be ſheltered, otherwiſe the young Plants will be deſtroyed. The Plants may alſo be propagated by Cuttings; which if planted in a ſhady Border, any Time in Summer, will very ſoon take Root, and furniſh Plenty of rooted Plants.

The 3d Sort is a Native of *Moldavia*; this has been long preſerved in curious Gardens. It is an annual Plant, which riſes with branching Stalks a Foot and a Half high, garniſhed with oblong Leaves, which are placed oppoſite, and deeply ſawed on their Edges. The Flowers come out in Whorls round the Stalks at every Joint; theſe are blue, and appear in *July*, continuing till the Middle of *Auguſt*, and the Seeds ripen in *September*. The Plants have a ſtrong balſamick Odour, which is to ſome Perſons very agreeable; the Seeds ſhould be ſown in ſmall Patches, in Spring, on Borders where they are to remain, and when the Plants come up, they ſhould be thinned where they grow too cloſe, and kept clear from Weeds, which is the only Culture they require. Of this there is a Variety with white Flowers, which is pretty common; this only differs from the other in the Colour of the Flowers, but yet theſe conſtantly retain their Difference from Seeds.

The 4th Sort was diſcovered by Dr. *Tournefort* in the *Archipelago*, who ſent the Seeds to the Royal Garden at *Paris*, which have ſince been communicated to many curious Gardens in *Europe*; this riſes with upright Stalks, about a Foot high, which ſeldom put out Branches; theſe are garniſhed with very long narrow Leaves, placed oppoſite at each Joint, where the Flowers come out in Whorls, almoſt the whole Length of the Stalks; theſe are of a pale blue, and appear about the ſame Time as the former; this Sort has very ſmall Flowers, which make no great Appearance; it is ſeldom cultivated, except in Botanic Gardens.

The 5th Sort was diſcovered by *Tournefort*, in the *Levant*; this hath hoary ſquare Stalks, which riſe a Foot and a Half high, putting out 2 or 3 Side Branches, garniſhed with hoary Leaves, near 2 Inches long, and Half an Inch broad, a little indented on their Edges; they are placed oppoſite at the Joints, juſt under the Whorls of Flowers, which ſit cloſe to the Stalk; theſe are larger than thoſe of the other Species, and of a fine blue Colour, which between the hoary Leaves of the Plant, makes a pretty Appearance. It flowers and ſeeds about the ſame Time as the former Sorts; this is generally treated as an annual, like the former Sort, but the Roots will live 2 Years in a dry Soil. There is a Variety of this with white Flowers, the Seeds of which always produce the ſame coloured Flowers.

The 6th Sort grows naturally in *Siberia*, from whence the Seeds were ſent to the Imperial Garden at *Peterſburgh*, and the late Dr. *Amman*, ſent me the Seeds. This is an annual Plant, from whoſe Root come out many ſquare weak Stalks, which grow about 9 Inches long; theſe are at the Bottom garniſhed with oval Spear-ſhaped Leaves about 2 Inches long, and one Inch and a Quarter broad, ſtanding oppoſite upon pretty long Foot Stalks, and are crenated on their Edges. The upper Part of the Stalks have ſmaller Leaves, which ſit cloſe at the Joints, from whence come out the Flowers in Whorls; they are of a deep blue Colour, and hang downward; theſe appear at the ſame Time with the former, and the Seeds ripen in Autumn.

The 7th Sort grows alſo in *Siberia*, the Seeds of this were ſent me with the former. It hath ſquare Stalks, which riſe a Foot and a Half high, the lower Leaves are very like thoſe of Betony, and ſtand on very long Foot Stalks. The upper Leaves are ſmall, and ſit cloſer to the Stalks. The Flowers come out in Whorls at every Joint; theſe are very ſmall, and of a pale purple, or blue Colour, ſo make little Appearance, but it is preſerved in ſome Gardens for the Sake of Variety.

The 8th Sort grows naturally in the *Levant*. This is an annual Plant, which riſes with a ſquare Stalk about a Foot high, ſending out 2 ſmall Side Branches from the lower Part. The Leaves are Spear-ſhaped, and crenated on their Edges; they are placed oppoſite, and ſtand on Foot Stalks. The Flowers are ſmall, of a purpliſh Colour, and come out in Whorls round the Stalks, having two roundiſh ſmall Leaves (called Bracteæ) immediately under them, which are ſawed on the Edges, each Serrature ending with a long Hair. This Sort flowers and ſeeds at the ſame Time as the former.

All theſe Sorts are propagated by Seeds, which may be ſown either in the Spring or Autumn, in the Places where the Plants are to remain, and will require no other Treatment than the third Sort.

DRACONTIUM. *Lin. Gen. Plant.* 916. *Dracunculus. Tourn. Inſt.* Dragon, in *French*, *Serpentaire.*

The *Characters* are,

It hath a ſingle cylindrical Stalk, on the upper Part of which the Parts of Fructification are diſpoſed in a ſingular Manner. The Flowers have no Empalement, but have 5 *oval concave Petals, which are equal; they have* 7 *narrow depreſſed Stamina the Length of the Petals, terminated by oblong four-cornered twin Summits, which ſtand erect; they have an oval Germen, ſupporting a taper Style, crowned by a* 3 *cornered Stigma. The Germen becomes a roundiſh Berry, incloſing ſeveral Seeds; theſe are all incloſed in a large fleſhy Spatha opening with one Valve.*

The *Species* are,

1. DRACONTIUM *foliis pertuſis, caule ſcandente. Lin. Sp. Pl.* 968. Dragon with Leaves having Holes, and a climbing Stalk. *Arum hederaceum, amplis foliis perforatis. Plum. Cat.* Climbing *Arum* with large perforated Leaves.

2. DRACONTIUM *ſcapo breviſſimo, petiolo radicato, lacero, foliolis tripartitis, laciniis pinnatifidis. H. C.* 434. Dragon with a very ſhort Stalk, the Foot Stalk cut, the ſmall Leaves divided in 3 Parts, which terminate in many Points. *Arum polyphyllum, caule ſcabro punicante.* Many leaved *Arum* with a rough purple Stalk.

3. DRACONTIUM *foliis ſagitatis, pedunculis petioliſque aculeatis. Flor. Zeyl.* 328. Dragon with Arrow-pointed Leaves, whoſe Foot Stalks have Spines. This is the *Arum Zeylanicum ſpinoſum, ſagittæ foliis. Par. Bat.* 75. Prickly *Arum* of *Ceylon*, with Arrow pointed Leaves.

4. DRACONTIUM *foliis lanceolatis, Amænit. Acad.* 2. p. 360. Dragon with Spear-ſhaped Leaves.

5. DRACONTIUM *acaule, foliis lanceolatis, ſerratis, ſpadice declinato. Burm. Tab.* 39. Dragon without Stalk, Spear-ſhaped ſawed Leaves, and a declining Stalk. *Arum amplis foliis acuminatis & pergamaceis, ex Inſula Sancti Thomæ Plum. Cat.* 4. *Arum* with large pointed Parchment-like Leaves from the Iſland of *St. Thomas.*

The 1ſt Sort grows naturally in the Iſlands in the *Weſt-Indies.* This hath ſlender jointed Stalks, which put out Roots at every Joint, which faſten to the Trunks of Trees, Walls, or any Support near them, and thereby riſe to the Height of 25, or 30 Feet. The Leaves are placed alternately, ſtanding on long Foot Stalks; they are 4 or 5 Inches long, and 2 and a Half broad; theſe have ſeveral oblong Holes in each, which on firſt View appear as if eaten by Inſects, but they are natural to the Leaves. The Flowers are produced at the Top of the Stalk, which always ſwells to a larger Size in that Part, than in any other; theſe are covered with an oblong Spatha (or Hood) of a whitiſh green Colour, which opens longitudinally on one Side, and ſhews the Piſtil, which is cloſely covered with Flowers, of a pale yellow, inclining to white. When this Plant begins to flower, it ſeldom advances farther in Height, ſo that theſe ſeldom are more than 7 or 8 Feet high, but the Leaves are much larger on theſe, than thoſe of the Plants which ramble much farther.

This Plant is eaſily propagated by Cuttings, which, if planted in Pots filled with poor ſandy Earth, and plunged into a hot Bed, will ſoon put out Roots, if they had none before; but there are few of the Joints which have not Roots; theſe Plants are tender, ſo will not live in the open Air in *England*, therefore the Pots ſhould be placed near the Walls of the Hot-houſe, againſt which the Plants will climb, and faſten their Roots in the Wall, and thereby ſupport the Stalks. They ſhould have but little Water in the Winter, but in warm Weather it muſt be given them 3 or 4 Times a Week, and in Summer the free Air ſhould be admitted in Plenty. Theſe Plants flower either in Spring or Autumn, having no particular Seaſon, but they do not ripen their Seeds in *England.*

The 2d Sort grows naturally in the Iſlands of *America.* I received the Roots from *Barbuda.* This hath a large knobbed irregular Root, covered with a rugged brown Skin. The Stalk riſes about a Foot high, is naked to the Top, where it is garniſhed with a Tuft of Leaves, divided into many Parts. The Stalk is ſmooth, of a purple Colour, but full of ſharp Protuberances of different Colours, which ſhine like the Body of a Serpent. The Stalk of the Flower riſes immediately from the Root, and is ſeldom more than 3 Inches high, having an oblong ſwelling Hood at the Top, which opens Lengthways, ſhewing the ſhort, thick, pointed Piſtil within, upon which the Flowers are cloſely ranged.

This Sort is tender, ſo requires a warm Stove to preſerve it in *England.* The Roots muſt be planted in Pots filled with light Kitchen Garden Earth, and plunged into the Tan Bed in the Stove, where they ſhould conſtantly remain; in Winter they muſt be watered ſparingly, but in warm Weather, when the Plants are in Vigour, they muſt be often refreſhed, with a little at a Time; with this Management the Plants will flower, but their Roots do not increaſe here.

The 3d Sort grows naturally in the Iſland of *Ceylon*, and in ſeveral Parts of *India*; this hath an oblong thick Root, full of Joints, from which ariſe ſeveral Leaves, ſhaped like thoſe of the common *Arum*, but their Foot Stalks are covered with rough Protuberances. The Stalk which ſupports the Flower is ſhort, and ſet with the like Protuberances, and at the Top is a Hood, or Spatha, about 4 Inches long, as thick as a Man's Finger, which opens longitudinally, and expoſes the Piſtil, which is ſet with Flowers. This is a tender Plant, and requires the ſame Treatment as the former Sort.

The 4th Sort hath Roots like the common *Arum*, from which come out ſeveral Spear-ſhaped Leaves, ſtanding each upon a ſeparate Foot Stalk ariſing immediately from the Root. This hath not yet flowered in *England*, ſo I can give no farther Account of it. This grows naturally in *Siberia*, ſo requires a ſhady Situation, and will bear the greateſt Cold of this Country.

The 5th Sort grows naturally in the *Weſt-Indies.* This hath a Root compoſed of many Knots and Joints, ſomewhat like thoſe of *Solomon*'s Seal, having ſcaly Protuberances; from theſe come out ſeveral long Spear-ſhaped Leaves, which ſtand upon ſhort Foot Stalks; they are 9 or 10 Inches long, and 3 broad in the Middle, diminiſhing gradually to both Ends; they are ſlightly ſawed on their Edges, and much veined. The Foot Stalks which ſupport the Flowers are ſlender, and riſe about 6 Inches high; they bend at the Top, ſo that the Piſtil on which the Flowers are placed, hang downward; theſe are long and ſlender, the Spatha, or Hood, is ſmall and narrow; this turns backward, and makes Way for the Piſtil to come out. This is a tender Plant, ſo requires the ſame Treatment as the 2d Sort.

Theſe Plants are preſerved in the Gardens of the Curious in *England* and *Holland*, more for Variety, than their Beauty, for except the 1ſt Sort, there is not any of them which makes much Appearance, that indeed may be ſuffered to have a Place againſt the Wall of the Stove, over which it will ſpread and cover the Wall, and the Leaves remaining all the Year, and ſo remarkably perforated, make a ſingular Appearance.

All the other Sorts of Dragon are very tender Plants, ſo will not live in this Country, unleſs they are preſerved in the warmeſt Stoves; the ſeveral *American* Sorts grow naturally in the Woods in *Jamaica*, and other hot Parts of *America*; the climbing Sorts twiſt themſelves round the Trunks of Trees, into which they faſten their Roots, which are ſent from their Joints, and riſe to the Height of 30 or 40 Feet. Theſe climbing Sorts are eaſily propagating by Cuttings, which, being very ſucculent, may be brought over to *England* in a Box of dry Hay, if they are packed up ſeparate, ſo as not to injure each other by the Moiſture, which is apt to flow out at the Part where they are cut off, which may occaſion a Fermentation, and thereby rot the Cuttings. When the Cuttings arrive, they ſhould be planted in ſmall Pots filled with light freſh Earth, and plunged into a hot Bed of Tanners Bark, being careful not to let them have too much Moiſture until they have taken Root, leſt it rot them; when they have taken Root, they muſt be frequently refreſhed with Water; and when they are grown pretty large, they ſhould be placed in the Bark Bed in the Stove, and placed near ſome ſtrong Plants, to which they may faſten themſelves, otherwiſe they will not thrive; for though they will ſend forth Roots at their Joints, which will faſten to the Mortar of the Stove, when placed againſt the Wall; yet they will not thrive near ſo well as againſt a ſtrong Plant, which will afford them Nouriſhment.

The other Sorts are propagated by Offſets from their Roots; theſe may be procured from the Countries of their Growth, and ſhould be planted in Tubs of Earth, about a Month before they are put on board the Ship to tranſport them; theſe Tubs ſhould be placed in a ſhady Situation, until they have taken Root. In their Paſſage they ſhould be carefully preſerved from Salt Water, as alſo not to have too much Water given them, for a little once or twice a Week, at moſt, while they are in a hot Climate, and, when they come into a cooler, once in a Fortnight, will be ſufficient for them; and it ſhould be done ſparingly, leſt it rot them, for if the Tops of the Plants ſhould decay for Want of Water in their Paſſage, if the Roots are not rotted, they will ſoon recover with proper Care.

When the Plants arrive, they ſhould be tranſplanted into Pots filled with light freſh Earth, plunged into a hot Bed of Tanners Bark, and gently watered, until they have taken good Root, after which they will require to be frequently refreſhed with Water; but as their Stems are very ſucculent, they muſt not have too much Moiſture. Theſe Plants muſt be conſtantly kept in the Stove, where, in hot Weather, they ſhould have freſh Air admitted to them; in Winter they muſt be kept very warm, otherwiſe they cannot be preſerved here.

Theſe Plants will riſe to the Height of 3, 4, or 5 Feet, and will afford a very agreeable Variety among other tender exoticks in the Stove.

DRACUNCULUS PRATENSIS. *See* Achillæa.

DRAGON. *See* Dracontium.

DULCAMARA. *See* Solanum.

DUNGS are deſigned to repair the Decays of exhauſted or worn-out Lands, and to cure the Defects of Lands, which are as various in their Qualities, as the Dungs that are uſed to meliorate and reſtore them: ſome Lands abound too much in Coldneſs, Moiſture, and Heavineſs; others are too light and dry; to anſwer this, ſome Dungs are hot and light, as that of Sheep, Horſes, Pigeons, *&c.* others are fat and cooling, as that of Oxen, Cows, Hogs, *&c.*

As the Remedies to be uſed muſt be contrary to the Diſtempers they are to cure; ſo the Dung of Oxen, Cows, and Hogs, muſt be given to clean dry light Earths, to make them fatter and cloſer; and hot and dry Dungs to meliorate cold, moiſt, and heavy Lands.

There are two peculiar Properties in Dungs, one is to produce a certain ſenſible Heat, capable of producing ſome conſiderable Effect, which Properties are ſeldom found but in the Dung of Horſes and Mules, while it is newly made, and a little moiſt; the other Property is, to fatten the Earth, and render it more fruitful.

The Dung of Horſes and Mules is of admirable Uſe in Gardens in the Winter Time, becauſe it then animates and enlivens all Things; and, in ſome Meaſure, ſupplies the Office which is performed by the Heat of the Sun in the Summer Time, affording us all the Novelties of the Spring, as Aſparagus, Cucumbers, Radiſhes, Melons, Sallads, *&c.* Horſe Dung is the beſt Improvement for cold jejune Lands that we can procure in any Quantity; but yet Horſe Dung, being uſed alone, or when it is too new, is prejudicial to ſome Plants; and if it be ſpread thin over Lands in the Summer Time, it is of very little Service, becauſe the Sun, drawing out all the Virtue and Goodneſs of it, renders it little better than Thatch, or dry Straw; and though too much of it can ſcarcely be uſed in a Kitchen Garden for Cabbages, Cauliflower, and all other Plants that grow there, and require Abundance of Nouriſhment; yet it may be a Fault to lay too much of it on Corn Lands, becauſe it produces Abundance of Straw.

In very cold moiſt Land, I have frequently ſeen new Horſe Dung buried as it came from the Stable, and always obſerved that the Crops ſucceeded better, than where the Ground was dreſſed with very rotten Dung.

Horſe Dung being of a hot Nature, is beſt for cold Lands, and Cow Dung for hot Land; being mixed together, they make a very good Manure for moſt Sorts of Soil, and for ſome they may be mixed with Mud.

Sheeps Dung and Deers Dung differ not much in Quality, and are eſteemed by ſome, the beſt of Dungs for cold Clays: Some recommend them to be beat to Powder, and ſpread very thin over Autumn or Spring Crops, about 4 or 5 Loads to an Acre, after the ſame Manner as Aſhes, Malt Duſt, *&c.* are ſtrewed.

This I have ſeen practiſed upon Corn, and alſo upon Graſs Land, to great Advantage for the 1ſt Year; but theſe light Dreſſings do not laſt long, therefore require to be often repeated.

In *Flanders*, they houſe their Sheep at Nights in Places ſpread with clean Sand, laid about 5 or 6 Inches thick; which, being laid on freſh every Night, is cleared out once a Week; this Mixture of Sand and Dung, makes an excellent Dreſſing for ſtrong Land; for the Dung and Urine of the Sheep is a very rich Manure, bears a conſiderable Price, and is excellent for all ſtiff cold Land: Mr. *Quintcney* is of Opinion, that it is the greateſt Promoter of Fruitfulneſs in all Sorts of Ground.

Others recommend Hogs Dung as the fatteſt and moſt beneficial of all Sorts of Dungs; and ſay, that one Load of it will go as far as two Loads of other Dung, that it is the beſt of all Dungs for Fruit Trees, eſpecially for Pear and Apple Trees in light Soil, and a very rich Dung for Graſs. I have often uſed this Dung to Fruit Trees when it was well rotted, and have found it the moſt beneficial to them of any Manure.

The Dung of Pigeons, Hens, and Geeſe, are great Improvers of Meadow or Corn Land; the firſt of theſe being the beſt ſuperficial Improvement, that can be laid on Meadow and Corn Land: But before it is uſed, it ought to have lain abroad out of the Dove-houſe ſome Time, that the Air may have a little ſweetened and mollified the fiery Heat that is in it.

Eſpecially it is good for cold, wet, clayey Lands; but it ought to be dried before it be ſtrewed, becauſe it is naturally apt to clod in Wet; and it ſhould be mixed with Earth or Sand to keep it from clinging together, that it may be ſtrewed thin, being naturally very hot and ſtrong.

Some recommend the Dung of Pigeons, and other Fowls, as the beſt Manure for Aſparagus, Strawberries, or Flowers: But this ſhould be rotted and well mixed with the Earth, before it is uſed to Flowers.

Monſieur *Gentil* approves of Pigeons Dung, as being good for ſuch Trees whoſe Leaves are apt to turn yellow, if they grow in free Soils that are rather cold than hot, provided the Heat of it has been abated by lying two or three Years in the Dunghill; but this ſhould be applied in Autumn, and in ſmall Quantities.

This being ſpread about an Inch thick at the Foot of a Tree, whoſe Leaves are yellow, and being left there till *March*, he recommends as very uſeful in cold and moiſt Soils.

The Dung of Poultry being hot and full of Salts, tends much to facilitate Vegetation; and is abundantly quicker in its Operation, than the Dung of Animals which feed on Herbs.

Sir *Hugh Plat* ſays, one Load of Grain will enrich Ground more than ten Loads of common Dung; which if it be true, it is rational to ſuppoſe, that if ſimple Grain, by only Infuſion in the Mixture of Compoſts, has a very good Effect, it will be more powerful when it has paſſed through the Bodies of Animals.

Human Dung is a great Improver of all cold ſour Lands, and eſpecially if it be mixed with other Earths or Dungs to give it a Fermentation.

But there is not any Sort of Manure equal to the Cleanſing of *London* Streets, for all ſtubborn clayey Soils; the Parts of which will be better ſeparated, and in a much leſs Time, with this Manure, than with any other Compoſt whatever; and where it can be obtained, is extremely well worth procuring, either for Corn, Graſs, or Garden Land.

DURANTIA. *Lin. Gen. Pl.* 704. *Caſtorea. Plum. Nov.*

The *Characters* are,

The Flower hath a permanent Empalement of one Leaf, which is erect, and cut into 5 *acute Segments at the Top, and ſits on the Germen; the Flower is of the ringent Kind, with one Petal having a long Tube, which opens at the Top in* 2 *Lips; the upper Lip is oval, erect, and concave; the under is divided into* 4 *equal Segments, which are round. It hath* 4 *ſhort Stamina, ſituated in the Bottom of the Tube, the* 2 *Middle being a little ſhorter than the other, terminated by proſtrate Summits; the Germen ſituated under the Flower, ſupports a long ſlender Style crowned by a headed Stigma. The Germen becomes a globular Berry, terminated by* 3 *acute Points, having one Cell incloſing* 4 *angular Seeds.*

The Title which was firſt given by Father *Plumier* to this Genus, was *Caſtorea*, in Memory of *Caſtor Durant*, a Phyſician of *Rome*, who publiſhed a Hiſtory of Plants in *Italian*, printed at *Rome* in 1585. Dr. *Linnæus* has now altered the Title, and inſtead of the Chriſtian Name, he has given it the Surname of the ſame Perſon.

The *Species* are,

1. DURANTIA *ſpinoſa. Lin. Sp. Plant.* 637. Prickly *Durantia.* This is the *Caſtorea repens ſpinoſa. Plum. Nov. Gen.* 30. Creeping prickly *Caſtorea.*

2. DURANTIA *inermis. Lin. Sp. Plant.* 637. *Durantia* without Thorns. This is the *Caſtorea racemoſa flore cæruleo, fructu croceo. Plum. N. G.* 30. Branching *Caſtorea* with a blue Flower and Saffron-coloured Fruit.

3. DURANTIA *caule erecto ſpinoſo, foliis ovatis integerrimis, floribus racemoſis. Durantia* with an upright prickly Stalk, oval entire Leaves, and Flowers growing in long Bunches. This is the *Jaſminum folio integro, obtuſo, flore cæruleo racemoſo, fructu flavo. Sloan. Cat. Jam.* 169. Jaſmine with entire obtuſe Leaves, blue Flowers growing in Bunches, and a yellow Fruit.

The 1ſt Sort hath many trailing Branches, armed with hooked Thorns at every Joint, and garniſhed with oblong Leaves, placed without Order, and ſlightly ſawed on their Edges; the Flowers come out from the Side of the Stalks in pretty long Bunches, like thoſe of the common Currant, of a pale bluiſh Colour, and ſucceeded by brown Berries not unlike the Fruit of the Hawthorn; theſe have one Cell, and incloſe 4 angular Seeds.

The 2d Sort hath a branching woody Stalk, 7 or 8 Feet high; the Branches are garniſhed with oval Spear-ſhaped Leaves, 3 Inches long, and one and a Half broad in the Middle; they are ſawed on their Edges, of a lucid green Colour, and ſtand oppoſite by Pairs. The Flowers are produced in long Bunches at the End of the Branches; theſe are blue, and ſucceeded by round yellow Berries, containing 4 angular Seeds.

The 3d Sort riſes with a ſtrong woody Stem 10 or 12 Feet High, covered with a white Bark, and divides into many Branches, armed with ſharp Thorns on their Side; theſe are garniſhed with oval ſtiff Leaves, one Inch long, and three Quarters broad. The Flowers come out in long Bunches from the End of the Branches, they are blue, and are ſucceeded by ſmall round yellow Berries, which contain 4 angular Seeds. I received this from *Jamaica.*

As the Plants are Natives of warm Countries, they require a Stove to preſerve them here; they are propagated by Seeds, which ſhould be ſown in ſmall Pots, and plunged in a hot Bed of Tanners Bark; when the Plants are fit to remove, they muſt be planted each into a ſmall Pot filled with light Earth, and plunged into the hot Bed again, obſerving to ſhade them till they have taken new Root, then they muſt be treated in the ſame Manner as other Plants from the ſame Country.

The 2d Sort may be propagated by Cuttings, planted in any of the Summer Months; theſe ſhould be plunged into a moderate hot Bed, and ſhaded from the Sun, till they have taken Root, then they may be treated as the ſeedling Plants. This Sort is not ſo tender as the other two, ſo may be placed in the open Air in Summer; and if they are kept in a moderate Degree of Warmth in Winter, they will thrive better than in great Heat. I have kept ſome of this Sort the three laſt Winters, in a dry warm Glaſs Caſe without Fires, and they have ſucceeded pretty well; but the laſt Winter proving ſevere, cauſed their Leaves to fall, but they put out again very well in the Spring.

DWARF TREES. Theſe were formerly in much greater Requeſt than at preſent; for though they have many Advantages, yet the Diſadvantages attending them greatly over-balance; and ſince the introducing of Eſpaliers into the *Engliſh* Gardens, Dwarf Trees have been in little Eſteem for the following Reaſons:

1ſt, The Figure of a Dwarf Tree is very often ſo much ſtudied, that, in order to render the Shape beautiful, little Care is taken to procure Fruit, which is the principal Deſign in planting theſe Trees.

2dly, The Branches being ſpread horizontally near the Surface of the Ground, render it very difficult to dig or clean the Ground between them.

3dly, Their taking up too much Room in a Garden (eſpecially when they are grown to a conſiderable Size) for nothing can be ſown or planted between them.

4thly, Theſe Trees ſpreading their Branches near the Ground, continually ſhade the Surface of the Earth, ſo that neither the Sun nor Air can paſs freely round their Roots and Stems, to diſſipate noxious Vapours; whereby the circumambient Air will be continually replete with crude rancid Vapours, which, being drawn in by the Fruit and Leaves, will render its Juices crude and unwholſome, as well as ill taſted.

It is alſo very difficult to get to the Middle of theſe Dwarf Trees in the Summer, when their Leaves and Fruit are on the Branches, without beating off ſome of the Fruit, and breaking the young Shoots; whereas the Trees on an Eſpalier can at all Times be come at on each Side, to tie up the new Shoots, or to diſplace all vigorous ones, which if left on, would rob the Trees of their Nouriſhment.

Add to this, the Fruit Buds of many Sorts of Pears and Apples are firſt produced at the End of the former Year's Shoot, which muſt be ſhortened in order to keep the Dwarfs to their proper Figure, ſo that the Fruit Buds are cut off, and a greater Number of Branches are obtained, than can be permitted to ſtand; ſo that all thoſe Sorts of Fruit Trees, whoſe Branches require to be trained at their full Length, are very improper to train up as Dwarfs; and the Peaches and Nectarines which will bear Amputation, are too tender to be trained ſo in this Country.

Theſe Evils being entirely remedied by training the Trees to an Eſpalier, hath juſtly gained them the Preference; however, if any one has a Mind to have Dwarf Trees, notwithſtanding what has been ſaid, I ſhall lay down a few Rules for their Management.

If you deſign to have Dwarf Pear Trees, you ſhould bud or graft them on Quince Stocks; but as many Sorts of Pears will not thrive if they are immediately budded or grafted on Quince Stocks, ſo ſome of thoſe Sorts which will take freely, ſhould be firſt budded on the Quince Stocks; and when theſe have ſhot, the Sorts you intend to cultivate, ſhould be budded into theſe; for Free Stocks are apt to make them ſhoot ſo vigorouſly, as not to be kept within Bounds. Theſe Grafts or Buds ſhould be put in about four or ſix Inches above the Surface of the Ground, that the Heads of the Trees may not be advanced too high, and when the Bud or Graft has ſhot out four Eyes, you ſhould ſtop the Shoot, to force out lateral Branches.

Two Years after Budding, theſe Trees will be fit to tranſplant where they are to remain; for though many People chooſe to plant Trees of a greater Age, yet they ſeldom ſucceed ſo well as young ones. The Diſtance theſe Trees ſhould be planted is twenty-five or thirty Feet aſunder, for leſs will not do if the Trees thrive well. The Ground between them may be cultivated for Kitchen Garden Herbs while the Trees are young, but you ſhould not ſow or plant too near their Roots.

In order to train your Trees regularly, you ſhould drive Stakes into the Ground round the Tree, to which the Branches ſhould be nailed down with Liſt in a horizontal Poſition; for if they are ſuffered to grow perpendicularly while young, they cannot be afterwards reduced, without great Violence, to any tolerable Figure. The neceſſary Directions to be afterwards followed are, not to ſuffer any Branches to croſs each other; and always in ſhortening any Shoots be ſure to leave the uppermoſt Eye outwards, whereby the Hollowneſs in the Middle of the Tree will be better preſerved; and be careful to rub off all perpendicular Shoots in the Middle of the Trees, as ſoon as they are produced. The other neceſſary Rules you will find under the Article of *Pruning.*

The Sorts of Pears which do beſt in Dwarfs, are all Summer and Autumn Fruits; for Winter Pears are not worth planting in Dwarfs, they ſeldom bearing well, nor are ever well taſted, and commonly are very ſtony, becauſe they are commonly grafted on Quince Stocks.

Apples are alſo planted in Dwarfs, moſt of which are now budded or grafted on Paradiſe Stocks; but as theſe are for the moſt Part of a ſhort Duration, they are not profitable, and are fit only for ſmall Gardens, as a Matter of Curioſity; producing Fruit ſooner, and in greater Plenty, than when they are upon Crab or Apple Stocks.

The Diſtance theſe Trees ſhould be planted, if on Paradiſe Stocks, ſhould be 6 or 8 Feet; but if on Crab Stocks, 25 or 30 Feet aſunder each Way. The Management of this being the ſame with Pears, I need not repeat it.

Some Perſons alſo plant Apricots and Plums for Dwarfs, but theſe ſeldom ſucceed well, as being of a tender Conſtitution; and thoſe which will produce Fruit on Dwarfs, are much more likely to do ſo when trained on an Eſpalier, where they can be much better managed; and therefore I judge it much the better Method, as being more certain, and the Trees will make a better Appearance.

E.

EARTH is the principal Matter whereof our Globe conſiſts; the Character of which, according to Dr. *Boerhaave*, is, That it is a *foſſil Body, neither diſſoluble by Fire, Water, nor Air; that it is inſipid, and tranſparent; more fuſible than Stone; ſtill friable, and containing uſually a Share of Fatneſs.*

There is no ſuch Thing as a ſtrictly ſimple Earth. Mr. *Boyle* ſays, That it doth not appear, that Nature, any more than Art, affords an elementary Earth; at leaſt, ſome which appear of the ſimpleſt Sorts are found, upon Examination, to have Qualities not aſcribed to pure Earth.

Of ſuch Earths ſome are ſimple and immutable; as Chalk, Pumice, and Rotten Stone; others compound and fatty; of which Kind are all Boles, red, white, and brown; Fullers Earth, and divers Kinds of medicinal Earths; as the *Cretica*, *Hungarica*, *Lemnian* Earth, and others.

Which Earths are all reſolvable into Oil, a little acid Salt, &c. and a Calx, which is the Baſis, or the Earth properly ſo called.

Sand is by Naturaliſts generally ranked as a Species of Earth, though not very properly; in that, Sands, ſtrictly ſpeaking, are a Sort of Cryſtals, or little tranſparent Pebbles, and are calcinable; and, by the Addition of a fixed alkaline Salt, fuſible, and convertible into Glaſs.

The fat Earth is rendered fertile by the Means of Sand, and becomes fit to feed and nouriſh Vegetables, &c. for pure Earth is liable to coaleſce into a hard coherent Maſs, as in Clay; and Earth thus embodied, and as it were glued together, would be very unfit for the Nouriſhment of Plants.

But if hard Sand, *i. e.* Cryſtals, which are indiſſoluble in Water, and ſtill retain the ſame Figure, be intermixed with ſuch Earth, they will keep the Pores of the Earth open, and the Earth itſelf looſe and incompact; and by that Means give Room for the Juices to move, aſcend, &c. and for Plants to be nouriſhed thereby.

Thus a Vegetable, being planted either in the Sand alone, or in the fat Glebe and Earth alone, receives no Growth or Increment, but is either ſtarved or ſuffocated; but mix the two, and the Maſs becomes fertile.

In Effect, by Means of Sand the Earth is rendered, in ſome Menſure, organical; Pores and Interſtices being hereby maintained or preſerved, ſomething analogous to Veſſels is effected; by which the Juices of the Earth may be conveyed, prepared, digeſted, circulated, and at Length excerned and thrown off in the Roots of Plants.

The Earth is made up of two Parts; the firſt the containing Part, *i. e.* the Body, Bed, or Couch. The ſecond Part contained, and thoſe are the nitrous or ſulphureous Particles, or prolifick Salts. The firſt is a lifeleſs inanimate Maſs, and is only the Receptacle of the other; for the Earth, conſidered ſimply, and abſtracted from the before-mentioned nitrous and prolifick Salts, is a lifeleſs, dead, and inanimate Maſs; but by the Co-operation of Water, Sun, and Air, is put into Motion, and promotes the Work of Vegetation: But if it were ſtript of thoſe prolifick Salts and ſpirituous Particles, would produce no Manner of Plant, Herb, &c. that ſhould be planted or ſown in it.

Theſe nitrous Particles, or prolifick Salts, are of various and different Qualities; and according as the Earth is more or leſs ſtored with all or ſome of them, it is more or leſs productive; and according as it abounds with ſome of them more than others, differing from one another in Contexture, it conſtitutes the different Species or Kinds of Soils adapted to the Propagation of different Plants; the Pores of whoſe Roots are formed to receive, and whoſe Nature is to attract, thoſe Salts that are congenial to them.

Some diſtinguiſh Earths into three Claſſes, Sand, Loam, and Clay, as thoſe upon one or other of which all others do in ſome Reſpects depend.

Gravel, and all the open Soils, till the Loam is come at, are of the ſandy Kind.

Thoſe binding Earths from the Loam downwards, till the Stiffneſs of Chalk may be come at, may be reckoned of the Clay Kind.

All theſe Sorts of Earth have a little Tendency to Vegetation, and have their Salts proper for it, but in a different Proportion; as a Peck of Clay may probably have double the Quantity of Salts in it that a Peck of Loam has, and a Peck of Loam may have ſix Times the Quantity of Salts that a Peck of Sand has.

Loam. Some call the ſuperficial Earth that we meet with in *England* by this Name, without having Regard to what Proportion of Sand and Clay it contains: Others again call that Earth Loam, that inclines more to Clay than Sand: Some by Loam mean that Sort of Earth that equally partakes of Sand and Clay, being a Medium between Sand and Clay, which they call Mother Earth; but the true Definition of Loam is, that Sort of Earth which is fat and ſlippery, not of ſo cloſe a Texture as Clay, nor too looſe and ſandy, but of a middle Nature between them, and is eaſily diſſolved by Froſt, and gentle or eaſy to be wrought: This is one of the beſt Soils for moſt eſculent Plants and Roots.

This Mother Earth, they ſay, may be in Colour either black or yellow; and of which of theſe Colours ſoever it be, Plants of all Sorts will grow in it.

Sand and Clay likewiſe produce certain Plants, which are natural to each of them, and conſequently will thrive better in them than in any other Soil.

But Sand is apt to precipitate thoſe Plants that are ſet in it, earlier than Clay, and will cauſe them to germinate near a Month ſooner than thoſe that grow in Clay, and that for this Reaſon; becauſe the Salts which are in the Sand, are liable to be put in Motion by the leaſt Approach of the Warmth of the Sun; but as Sand is quick in the Operation, ſo the Salts are ſoon exhaled and ſpent.

Clay. The Pores of Clay are more cloſely compacted together, and do not ſo eaſily give out thoſe Salts that are contained in it; nor can the Fibres of every tender Plant make their Way through it in Queſt of their proper Nutriment.

But if the Parts of the Clay be opened, by digging and breaking it into ſmall Particles, and thoſe Parts be kept open by a Mixture of ſome ſharp Sand, or ſome other Body of the like Quality, the Effects of its Vigour will plainly appear.

Some diſtinguiſh the ſeveral Temperaments of the Earth either into a light, ſandy, or looſe Contexture; or into thoſe of a ſtiff, clayey, or cloſe one, either of which have their reſpective good Qualities; and all of them, when they are in their Extremes, require Art to render them uſeful and beneficial in the Production and Growth of Plants.

A light, ſandy, or looſe Earth, requires a proper Ligature, and ſhould have a Compoſt of a heavier Nature; and thoſe that are heavy, clayey, and cloddy, ſhould have a Compoſt of a more fiery, ſprightly Nature, that will inſinuate itſelf into the heavy, lumpy, indigeſted Clods, which would otherwiſe very much obſtruct the Buſineſs of Vegetation.

A good Earth ſhould be of a blackiſh Colour, fat, pliant, or eaſy to be dug; it ſhould be neither cold nor light; it ought to have no ill Smell or Taſte, and it ſhould be of the ſame Quality three or four Feet deep for Trees; which, if they have not that Depth, will languiſh and decay, after they have been planted ſix Years. But this Depth is not required for Fruit Trees, which will thrive very well, if they have two Feet and a Half of good Earth; and generally produce the moſt generous Fruits, when their Roots ſpread near the Surface of the Earth.

In order to know whether the Earth has any ill Smell or Taſte, they direct to lay a Handful of it to ſoke in Water for ſeven or eight Hours, and afterwards to ſtrain it, and taſte and ſmell it, by which the Taſte or Smell will eaſily be perceived.

EARWIGS.

Theſe are very troubleſome Vermin in a Garden, eſpecially among Carnations; for they are ſo fond of theſe Flowers, that if Care is not taken to prevent them, they will entirely deſtroy them, by eating off the ſweet Part at the Bottom of the Petals or Leaves. To prevent which, ſee *Carnation*, under the Article *Dianthus*.

Others hang the hollow Claws of Crabs and Lobſters upon Sticks in divers Parts of the Garden, into which theſe Vermin get; and by often ſearching them, you will deſtroy them without much Trouble; which will be of great Service to your Wall Fruit, for theſe are great Deſtroyers of all ſoft Fruits.

EBENUS. *Lin. Gen. Barba Jovis. Tourn.* Ebony.

The *Characters* are,

The Empalement of the Flower is of one Leaf, which is divided into 5 *acute Segments at the Top; the Flower is of the Butterfly Kind, the Vexillum is obtuſe and reflexed, the Wings are equal in Length with the Vexillum, they are broad and roundiſh; the Keel is ſhorter and turns upwards. It hath* 10 *Stamina, joined, ſtanding together, and the other ſeparate, terminated by ſingle Summits. In the Bottom is ſituated an oblong Germen, ſupporting a riſing Style crowned by a ſingle Stigma; the Germen afterward becomes an oblong ſwelling Pod, opening with two Valves, and incloſing three or four Kidney-ſhaped Seeds.* This is diſtinguiſhed from *Trifolium*, by the Bracteæ which are ſituated between the Flowers on the Spike.

We have but one *Species* of this Genus.

EBENUS. *Lin. Sp. Plant.* 764. Ebony. This is the *Barba Jovis lagopoides, Cretica, fruteſcens, incana, flore ſpicato purpureo amplo. Breyn. Prod.* 2. Shrubby Haresfoot *Jupiter*'s Beard of *Crete*, with hoary Leaves, and a large purple Flower growing in Spikes.

This Plant grows naturally in *Crete*, and in ſome of the Iſlands of the *Archipelago*; it riſes with a ſhrubby Stalk 3 or 4 Feet high, which puts out ſeveral Side Branches, garniſhed with hoary Leaves at each Joint, compoſed of 5 narrow Spear-ſhaped Lobes, which join at their Tails to the Foot Stalk, and ſpread out like the Fingers of a Hand: The Branches are terminated by thick Spikes of large purple Flowers, of the Butterfly or Pea-bloom Kind; the Spikes are from 2 to 3 Inches long, ſo make a fine Appearance, eſpecially when the Plants are ſtrong, and have many Spikes of Flowers on them. It flowers in *June* and *July*, and in warm Seaſons will ſometimes perfect Seeds in *England*.

This is propagated by Seeds, which ſhould be ſown in Autumn, for thoſe ſown in Spring often fail; they muſt be ſown in Pots, and placed under a Frame in Winter, where they may be protected from Froſt; in Spring the Plants will come up, which ſhould be kept clean from Weeds, and refreſhed now and then with Water. When theſe have acquired Strength enough to be removed, they ſhould be each planted in a ſmall Pot, filled with light Earth, and plunged into a moderate hot Bed, juſt to promote their taking new Root; then they ſhould be gradually inured to bear the open Air, into which they ſhould be removed the latter End of *May*, placing them in a ſheltered Situation, where they may remain till Autumn, when they muſt be removed into Shelter, for theſe Plants will not live in the open Air through the Winter; nor ſhould they be too tenderly treated, leaſt they draw up weak: I have found them ſucceed beſt when placed in an airy Glaſs Caſe without Fire in Winter, where they will have more Sun and Air, than in a Green-houſe: During the Winter Seaſon, the Plants muſt be ſparingly watered, but in Summer they require to be often refreſhed.

freſhed. The other Management is the ſame as for other of the hardier exotick Plants, among which this will make a fine Variety.

EBULUS. *See* Sambucus.

ECHINATE SEEDS [of *Echinus*, *Lat.* a Hedgehog]; ſuch Seeds of Plants as are prickly and rough.

ECHINOMELOCACTUS. *See* Cactus.

ECHINOPHORA. *Lin. Gen. Plant.* 292. *Tourn.* Prickly Parſnep.

The *Characters* are,

It hath an umbellated Flower; the general Umbel is compoſed of many ſmaller, the intermediate being the ſhorteſt; the Involucrum of the general Umbel ends in acute Thorns, thoſe of the Rays are turbinated, of one Leaf, cut into ſix unequal Parts, with acute Points; the Perianthium is divided into 5 Parts, and ſits on the Germen; the general Umbel is uniform; the Flowers have 5 unequal Petals, which ſpread open; they have each 5 Stamina, terminated by roundiſh Summits. Under the Perianthium is ſituated an oblong Germen with the Empalement, ſupporting 2 Styles, crowned by ſingle Stigmas; the Germen turns to 2 Seeds, incloſed in the hard Empalement.

The *Species* are,

1. ECHINOPHORA *foliolis ſubulato-ſpinoſis integerrimis. Lin. Sp. Plant.* 239. Prickly-headed Parſnep, with Awl-ſhaped prickly Leaves which are entire. This is the *Echinophora maritima ſpinoſa. Tourn. Inſt.* 656. Prickly maritime Parſnep.

2. ECHINOPHORA *foliolis inciſis inermibus. Lin. Sp.* Prickly-headed Parſnep, whoſe ſmall Leaves are cut, but have no Thorns. *Echinophora paſtinacæ folio. Tourn.* Prickly-headed Parſnep with a Carrot Leaf.

Theſe Plants grow naturally on the Borders of the *Mediterranean* Sea; they are preſerved in Botanic Gardens for Variety: They have both perennial Roots, which creep in the Ground; the 1ſt hath branching Stalks, growing 5 or 6 Inches high, which are garniſhed with ſhort thick Leaves, that terminate in 2 or 3 ſharp Thorns; they are placed by Pairs oppoſite: The Flowers grow in an Umbel, ſitting upon a naked Foot Stalk, which ariſes from the Side of the Stalk; the Flowers are white, and under the Umbel is ſituated an Involucrum, compoſed of ſeveral Leaves, which terminate in ſharp Spines. It flowers in *June*, but ſeldom ripens Seeds in this Country.

The 2d Sort riſes near a Foot and a Half high; from the principal Stalk are ſent out 2 Side Branches at every Joint, placed oppoſite; the lower Part is garniſhed with Leaves, finely divided like thoſe of the Carrot; the Flowers grow in ſmall Umbels at the Extremity of the Branches, having a ſhort prickly Involucrum. This flowers in *July*, but doth not ripen Seeds in *England*

Theſe Plants are propagated by their creeping Roots in *England*, as they do not produce Seeds here; the beſt Time to tranſplant them is the Beginning of *March*, a little before they ſhoot: The Roots ſhould be planted in a gravelly or ſandy Soil, and in a warm Situation, or otherwiſe they ſhould be covered in the Winter to prevent the Froſt from deſtroying them.

ECHINOPS. *Lin. Gen. Plant.* 829. *Echinopus. Tourn. Inſt. R. H.* 463. *Tab.* 262. Globe Thiſtle.

The *Characters* are,

It hath a permanent Perianthium, which is oblong, angular, and imbricated; the Flower hath one Funnel-ſhaped Petal, which is divided at the Top into 5 Parts, which ſpread open and are reflexed. It hath 5 ſhort hairy Stamina, terminated by cylindrical Summits. In the Bottom of the Tube is ſituated an oblong Germen, ſupporting a ſlender Style, the Length of the Tube, crowned by 2 oblong depreſſed Stigmas which turn back; the Germen becomes an oblong oval Seed narrowed at the Baſe, but obtuſe and hairy at Top.

The *Species* are,

1. ECHINOPS *calyculis unifloris, caule multifloro, foliis ſpinoſis ſuprà nudis. Lin. Sp. Pl.* 814. Globe Thiſtle with one Flower in each Empalement, many Flowers upon a Stalk, and prickly Leaves naked on the upper Side. This is the *Echinopus major.* Greater Globe Thiſtle.

2. ECHINOPS *calycibus unifloris, caule unicapitato. Lin. Sp. Plant.* 815. Globe Thiſtle with one Flower in each Empalement, and one Head upon a Stalk. This is the *Echinopus minor. J. B.* 3. 72. Smaller Globe Thiſtle.

3. ECHINOPS *minor annuus, magno capite. Tourn. Inſt.* 463. Smaller annual Globe Thiſtle with a large Head.

4. ECHINOPS *Græcus, tenuiſſimè diviſus & lanuginoſus, capite minori cæruleo. Tourn. Cor.* 34. *Greek* Globe Thiſtle whoſe Leaves are divided into narrow Segments and are woolly, with a ſmaller blue Head.

The firſt is the common Globe Thiſtle, which has been long cultivated in Gardens; this grows naturally in *Italy* and *Spain*; it hath a perennial Root, from which ariſe many Stalks that grow to the Height of 4 or 5 Feet; theſe are garniſhed with long jagged Leaves, divided into many Segments almoſt to the Mid-rib, the Jags ending in Spines; they are of a dark green on their upper Side, but woolly on their under; the Flowers collected in globular Heads, ſeveral of theſe grow upon each Stalk; the common hath blue Flowers, but there is a Variety of it with white. It flowers in *July*, and the Seeds ripen in *Auguſt*.

This Plant is eaſily propagated by Seeds, which, if permitted to ſcatter, the Plants will riſe in Plenty, ſo a few of them may be tranſplanted to the Places where they are deſigned to remain to flower; they require no other Culture, but to keep them clean from Weeds: The 2d Year they will flower and produce Seeds, and the Roots will continue 2 or 3 Years after; but if the Seeds ſcatter, the Plants will become troubleſome Weeds; to prevent which, the Heads ſhould be cut off as ſoon as the Seeds are ripe.

The 2d Sort grows in the South of *France* and in *Italy*; this hath a perennial Root, which ſends up ſeveral ſtrong Stalks, that riſe 2 Feet high, and are garniſhed with Leaves cut into many fine Segments to the Mid-rib; theſe are ſet with Prickles, and are white on their under Side: The Stalks branch out toward the Top; each of theſe Branches is terminated by a globular Head of Flowers, which are ſmaller than thoſe of the 1ſt, and of a deeper blue; there is alſo a Variety of this with white Flowers. It flowers about the ſame Time as the firſt, and is propagated the ſame Way. Theſe will both grow in almoſt any Soil or Situation.

The 3d Sort grows naturally in *Spain* and *Portugal*: This is an annual Plant, which riſes with a ſtiff white Stalk 2 Feet high; this is garniſhed with divided Leaves, ending in many Points which have Spines; their upper

Side is green, and covered with brown Hairs, their under Side white and woolſy; the Stalk is terminated by one large Head of pale blue Flowers. Theſe appear in *July*, and if the Seaſon proves warm and dry, the Seeds will ripen in Autumn, but in wet cold Years they rarely ripen here.

Theſe Seeds ſhould be ſown in Spring, on a Border of light Earth, where the Plants are to remain; they require no Care but to thin them where they are too cloſe.

The 4th Sort grows naturally in *Greece*, from whence Dr. *Tournefort* ſent the Seeds to the Royal Garden at *Paris*: This hath a perennial creeping Root, by which it multiplies faſt; the Stalks riſe about a Foot high, cloſely garniſhed with Leaves which are ſhorter and much finer divided than either of the former Sorts; theſe are hoary, and armed on every Side with ſharp Thorns; the Stalks are terminated by one large globular Head of Flowers, which in ſome are blue, and others white. They appear the latter End of *June*, and in warm Seaſons the Seeds ripen well in *England*. This is eaſily propagated by its creeping Roots, or from Seeds; it loves a dry Soil, and a warm Situation.

ECHINUS, *Lat.* is the prickly Head or Cover of the Seed or Top of any Plant, ſo called from its Likeneſs to a Hedgehog.

ECHIUM. *Lin. Gen. Plant.* 157. *Tourn. Inſt. R. H.* Viper's Bugloſs, in *French*, *Viperine*.

The *Characters* are,

The Flower hath a permanent Empalement, divided into 5 *Parts. It hath one Petal, with a ſhort Tube with an erect broad Brim, cut into* 5 *Parts, and is obtuſe; the* 2 *upper being longer than the lower, which are acute and reflexed. It hath* 5 *Awl-ſhaped Stamina, terminated by oblong proſtrate Summits. In the Bottom are ſituated* 4 *Germina with one ſlender Style, crowned by an obtuſe bifid Stigma; the Germina afterward become ſo many roundiſh pointed Seeds, incloſed in the rough Empalement.*

The *Species* are,

1. ECHIUM *caule ſimplici erecto, foliis caulinis lanceolatis hiſpidis, floribus ſpicatis lateralibus, ſtaminibus corolla æquantibus.* Viper's Bugloſs with a ſingle erect Stalk, having rough Spear-ſhaped Leaves, and Flowers in Spikes proceeding from the Side, with the Stamen equaling the Petal. This is the *Echium vulgare. C. B.* Common Viper's Bugloſs.

2. ECHIUM *caule ſimplici erecto, foliis caulinis lanceolato-linearibus hiſpidis, floribus lateralibus ſpicatis ſeſſilibus, ſtaminibus corollâ longioribus.* Viper's Bugloſs with a ſingle erect Stalk, having rough narrow Spear-ſhaped Leaves, Flowers ſitting cloſe, and growing in ſhort Spikes on the Side, and a Stamen longer than the Petal. This is the *Lycopſis Anglica. Lob. Engliſh Lycopſis.*

3. ECHIUM *corollis vix calycem excedentibus, margine villoſis. Hort. Upſ.* Viper's Bugloſs, whoſe Petals ſcarce exceed the Empalement, and having hairy Borders. This is the *Echium majus & aſperius, flore albo. C. B. P.* 25. Great rough Viper's Bugloſs, with a white Flower.

4. ECHIUM *foliis radicalibus lanceolatis ampliſſimis, caulinis linearibus hirſutis, corollis ſtamine longioribus.* Viper's Bugloſs with large Spear-ſhaped Leaves at the Root, theſe on the Stalks narrow and hairy, and the Petal of the Flower longer than the Stamina. This is the *Echium ampliſſimo folio, Luſitanicum. Tourn. Portugal* Viper's Bugloſs, with a large Leaf.

5. ECHIUM *calycibus fructeſcentibus diſtantibus, caule procumbente. Hort. Upſ.* Viper's Bugloſs with fruitful Empalements growing at a Diſtance, and a trailing Stalk. *Echium Creticum latifolium rubrum. C. B.* Broad-leaved Viper's Bugloſs of *Candia*, having a red Flower.

6. ECHIUM *caule ramoſo, aſpero, foliis calloſo-verrucoſis, ſtaminibus corollâ longioribus.* Viper's Bugloſs with a rough branching Stalk, warted Leaves, and Stamina longer than the Petal. This is the *Echium Creticum anguſtifolium rubrum. C. B.* Narrow-leaved Viper's Bugloſs of *Candia*, having a red Flower.

7. ECHIUM *caule fruticoſo. Hort. Cliff.* 43. Viper's Bugloſs with a ſhrubby Stalk. This is the *Echium Africanum fruticans, foliis piloſis. Hort. Amſt.* 2. p. 107. Shrubby *African* Viper's Bugloſs, having hairy Leaves.

The 1ſt Sort grows naturally in *Germany* and *Auſtria*, from whence I received the Seeds. This and our common Viper's Bugloſs, which is the 2d, have been confounded by moſt of the Writers on Botany, who have ſuppoſed they were the ſame Plant, whereas they are very different; for the Leaves of this are ſhorter, and much broader than thoſe of the 2d; the Spikes of Flowers are much longer, and the Stamina of the Flowers are in this equal in Length with the Petal; whereas thoſe of the 2d ſtand out much beyond the Petal, which is an eſſential Difference.

The 2d Sort grows naturally on chalky Lands, in moſt Parts of *England*: This is what *Lobel* titles *Lycopſis Anglica*, and has been generally taken for the common *Echium*.

The 3d Sort grows naturally in the South of *France*, and in *Italy*; this riſes with an upright Stalk, which is very hairy, as are alſo the Leaves; the Flowers are produced in ſhort Spikes on the Side of the Branches; they are ſmall, and ſcarce appear above the Empalements; ſome Plants have white Flowers, and others are purpliſh; the Empalements of the Flowers are very hairy, and cut into acute Segments.

The 4th Sort grows naturally in *Portugal* and *Spain*; the lower Leaves of this are more than a Foot long, and 2 Inches broad in the Middle gradually leſſening to both Ends; theſe are covered with ſoft Hairs. The Stalks grow 2 Feet high; the Flowers are in ſhort Spikes coming from the Side of the Stalks; the Petals of theſe are longer than the Stamina.

The 5th Sort grows naturally in *Crete*; this hath trailing hairy Stalks, which grow about a Foot long, and put out ſeveral Side Branches, garniſhed with hairy Spear-ſhaped Leaves about 3 Inches long, and 3 Quarters of an Inch broad, ſitting cloſe to the Stalks. The Flowers come out on ſlender Spikes upon long Foot Stalks, which come from the Wings of the Leaves; they are large, of a reddiſh purple Colour, which turns to a fine blue when they are dried; theſe ſtand at a Diſtance from each other on the Spike. It is an annual Plant, which flowers in *July* and decays in Autumn.

The 6th Sort hath branching Stalks, which grow a Foot and Half long, declining toward the Ground; they are covered with ſtinging Hairs, and are warted; the Leaves are 4 Inches long, and not more than half an Inch broad; theſe are pretty much warted, and are hairy. The Flowers grow in looſe Spikes from the Side of the Stalks, and alſo at the End of the Branches; they are of a reddiſh purple Colour, but not ſo large as thoſe of the former Sort, and the Stamina of theſe are longer than the Petals. This is alſo an annual Plant, which grows naturally in *Crete*.

Theſe are all of them biennial Plants, except the 5th and 6th Sorts, which are annual, and are the moſt beautiful of all the Kinds: The Seeds of theſe muſt be ſown every Year, in the Places where they are deſigned to remain; and the Plants require no other Culture, but to keep them clean from Weeds, and thin them where they grow too cloſe. In *July* they flower, and their Seeds ripen in 5 or 6 Weeks after. The Seeds of the other Sorts being ſown in Spring, will the ſecond Summer after produce Flowers and Seeds, after which they ſeldom continue. They all delight in a rubbiſhy gravelly Soil, and will grow on the Tops of old Walls or Buildings; where, when once they have eſtabliſhed themſelves, will drop their Seeds and thereby maintain a Succeſſion of Plants without any Care; on theſe Places they appear very beautiful.

The 7th Sort grows naturally at the *Cape of Good Hope*, from whence the Seeds were brought to *Holland*. This riſes with a ſhrubby Stalk 2 or 3 Feet high, dividing upward into ſeveral Branches, garniſhed with oval Leaves placed alternate, whoſe Baſe ſits cloſe to the Stalk; they are hairy, and of a light green. The Flowers are produced ſingly between the Leaves at the End of the Branches; they are of a purple Colour, and in Shape much like thoſe of the 5th Sort. Theſe appear in *May* and *June*, and the Seeds ripen about 6 Weeks after.

It is propagated by Seeds, which ſhould be ſown in Pots filled with light ſandy Earth ſoon after they are ripe. Theſe may be expoſed to the open Air till the Beginning of *October*, when the Pots ſhould be placed under a Frame, to guard them from Froſt; but in mild Weather, they ſhould have the free Air, to prevent the Seeds from vegetating till the Winter is paſt; for if the Plants come up at that Seaſon, their Stems will be weak and full of Juice, and very liable to rot with Damps; therefore it is much better if the Plants do not come up till toward *March*, which is the uſual Time of their appearing, when the Seeds are not forced by Warmth. When they are fit to remove, they ſhould be each planted into a ſmall Pot filled with light Earth, and placed under a Frame to forward their putting out new Roots; then they ſhould be gradually inured to bear the open Air, and the latter End of *May* placed abroad in a ſheltered Situation to remain till the Beginning of *October*, at which Time they muſt be removed into an airy Glaſs Caſe, where they may enjoy the Sun and have free Air in mild Weather. During the Winter Seaſon, theſe Plants muſt be ſparingly watered; for as their Stems are ſucculent, much Moiſture will cauſe them to rot. In Summer they ſhould be ſet abroad in a ſheltered Situation, and treated in the ſame Manner as other Plants from the ſame Country.

EDERA QUINQUEFOLIA. *See* Vitis.

EDGINGS. The beſt and moſt durable Plant for Edgings in a Garden, is Box; which if well planted, and rightly managed, will continue in Beauty ſeveral Years: The beſt Seaſon for planting this, is either in the Autumn, or very early in the Spring; for if you plant it late, and the Seaſon ſhould prove hot and dry, it will be very ſubject to miſcarry, unleſs great Care be taken to ſupply it with Water. The beſt Sort for this Purpoſe is the Dwarf *Dutch* Box.

Theſe Edgings are only planted upon the Sides of Borders next Walks, and not (as the Faſhion was ſome Years ago) to plant the Edgings of Flower Beds, or the Edges of Fruit Borders, in the Middle of Gardens, unleſs they have a Gravel Walk between them; which renders it proper to preſerve the Walks clean, by keeping the Earth of the Borders from waſhing down into the Walks in hard Rains.

It was alſo the Practice formerly, to plant Edgings of divers Sorts of aromatick Herbs, as Thyme, Savory, Hyſſop, Lavender, Rue, *&c.* But theſe very ſoon grow woody, ſo cannot be kept in due Compaſs, and in hard Winters they are often killed in Patches, whereby the Edgings are rendered incomplete, they are now ſeldom uſed for this Purpoſe.

Some People make Edgings of Daiſies, Thrift, Catchfly, and other flowering Plants; but theſe alſo require to be tranſplanted every Year, to have them handſome; for they ſoon grow out of Form, and are ſubject alſo to decay in Patches; there is not any Plant which ſo completely anſwers the Deſign as the Dwarf Box, which is preferred to all others for this Purpoſe.

EHRETIA. *Trew. Tab.* 25. *Ceraſſo affinis. Sloan. Cat.* 169. Baſtard Cherry Tree.

The *Characters* are,

The Flower has a ſmall permanent Empalement of one Leaf; it has a Bell-ſhaped Petal, cut into ſix Segments to the Middle which are reflexed, and 6 *Stamina which are longer than the Petal, and ſpread open every Way, terminated by roundiſh Summits; it has a roundiſh Germen ſupporting a ſlender Style, crowned by an obtuſe Stigma. The Germen afterward becomes a ſucculent Berry with* 2 *Cells, including* 2 *Stones, each having* 2 *Kernels, which are convex on one Side, and plain on the other.*

We know but one *Species* of this Genus, *viz.*

Ehretia. This is the *Ehretia foliis alternis oblongis acuminatis, ſpicâ florum ſparſâ petalis reflexis albis. Trew. Tab.* 25. *Ehretia* with alternate, oblong, acute-pointed Leaves, and ſparſed Spikes of Flowers, having white reflexed Petals; it is called Baſtard Cherry Tree in the *Weſt-Indies*.

This has a ſtrong woody Trunk, which grows to the Size of a middling Pear Tree, covered with a gray furrowed Bark, and divides into many Branches, which are garniſhed with oblong, acute-pointed, ſmooth Leaves, 5 or 6 Inches long, and 2 and a Half broad, of a dark green Colour on their upper Side; they are placed alternate, having ſhort Foot Stalks. The Flowers are produced into Panicles at the End of the Branches; they are ſmall, white, and of one Petal, having a Bell-ſhaped Tube, but is cut into 6 Segments to the Middle which are reflexed; theſe are ſucceeded by ſmall, oval, ſucculent Berries containing one or two Stones; it grows in moſt Parts of the Iſlands of the *Weſt-Indies*.

This is propagated by Seeds ſown in Pots, and plunged in a hot Bed of Tan; when the Plants come up they may be treated as the *Malpighia*, to which the Reader is referred, to avoid Repetition. This Plant has produced Flowers ſeveral Times in the *Chelſea* Garden, but it has not perfected Fruit here.

The Title of this Genus was given by the learned Dr. *Trew* of *Nuremberg*, in Honour of Mr. *George Denis Ehret* a curious Botaniſt, who ſent a Drawing of the Plant to the Doctor, taken from one of the Plants that flowered in the *Chelſea* Garden, from which he has publiſhed a curious Print in his 25th Table.

ELÆAGNUS. *Lin. Gen. Plant.* 148. *Tourn. Cor.* 53. *Tab.* 489. Oleaſter, or wild Olive.

The *Characters* are,

The Flower hath a Bell-ſhaped Empalement of one Leaf, which is quadrifid, rough on the Outſide, but coloured within. It hath no Petals, but 4 ſhort Stamina which are inſerted in the Diviſions of the Empalement, and are terminated by oblong proſtrate Summits. At the Bottom is ſituated a roundiſh Germen ſupporting a ſingle Style, crowned by a ſingle Stigma; the Germen becomes an obtuſe oval Fruit, with a Puncture at the Top, incloſing one obtuſe Nut.

The *Species* are,

1. ELÆAGNUS *aculeatus, foliis lanceolatis.* Prickly wild Olive with Spear-ſhaped Leaves. This is the *Elæagnus Orientalis latifolius, fructu maximo. Tourn. Cor.* Eaſtern broad-leaved wild Olive, with a large Fruit.

2. ELÆAGNUS *inermis, foliis lineari-lanceolatis.* Wild Olive without Thorns, and narrow Spear-ſhaped Leaves. This is the *Elæagnus Orientalis anguſtifolius, fructu parvo olivæformi ſubdulci. Tourn.* Eaſtern wild Olive, with narrow Leaves, and a ſmall ſweet Olive-ſhaped Fruit.

3. ELÆAGNUS *foliis ovatis. Prod. Leyd.* 250. Wild Olive with oval Leaves. This is the *Elæagnus foliis rotundis maculatis. Burm. Pl. Zeyl.* 92. Wild Olive with round ſpotted Leaves.

The 1ſt and 2d Sorts Dr. *Tournefort* found growing naturally in the *Levant*, and the firſt I take to be the common Sort, which grows naturally in *Bohemia*, of which I ſaw ſome Trees growing in the curious Garden of the late Dr. *Boerhaave* near *Leyden*. The Leaves of this Sort are not more than 2 Inches long, and about 3 Quarters of an Inch broad in the Middle; they are white, and have a ſoft cottony Down on their Surface; at the Foot Stalk of every Leaf, there comes out a pretty long ſharp Thorn; as the Leaves are placed alternate on the Branches, the Spines come out on each Side juſt below the Foot Stalks of the Leaves, and are alternately longer: The Flowers are ſmall, the Inſide of the Empalement is yellow, and they have a ſtrong Scent when fully open.

The 2d Sort hath no Thorns, the Leaves are more than 3 Inches long, and not half an Inch broad; they are very ſoft, and have a ſhining Appearance like Sattin. The Flowers come out at the Foot Stalks of the Leaves, ſometimes ſingly, at other Times 2, and frequently 3 at the ſame Place; the Outſide of the Empalement is ſilvery and ſtuded, the Inſide of a pale yellow, having a very ſtrong Scent. This flowers in *July*, and ſometimes the Flowers are ſucceeded by Fruit. This is the Sort moſt common in the *Engliſh* Gardens.

Theſe Plants may be propagated by laying down the young Shoots in Autumn, which will take Root in one Year, when they may be cut off from the old Trees, and either tranſplanted into a Nurſery for 2 or 3 Years, to be trained up, or into the Places where they are to remain. The beſt Seaſon for tranſplanting theſe Trees is the latter End of *February*, or Beginning of *March*; though they may be removed at *Michaelmas*, provided the Roots are mulched, to protect them from ſevere Froſt in Winter. Theſe Plants ſhould be placed where they may be ſcreened from ſtrong Winds, for they grow very freely, and are very ſubject to be ſplit down by the Wind, if too much expoſed.

Theſe Trees commonly grow to 12 or 14 Feet high, and when intermixed with other Trees of the ſame Growth, make a pretty Diverſity; their Leaves being of a Silver Colour, are eaſily diſtinguiſhed at a Diſtance.

The 3d Sort grows naturally at *Ceylon*, and in ſome other Parts of *India*. This is pretty rare at preſent in the *Engliſh* Gardens, but ſome Years paſt there were ſeveral pretty large Plants of it in the Garden at *Hampton Court*. This riſes with a woody Stem to the Height of 8 or 9 Feet, dividing into many Branches, garniſhed with oval ſilvery Leaves, which have ſeveral irregular Spots of a dark Colour on their Surface; they are placed alternately on the Branches, and continue all the Year. The Flowers I have not ſeen, though ſome of the Trees at *Hampton Court* produced Flowers, but I was not ſo lucky as to ſee them.

This Sort requires a warm Stove in this Country, for it is too tender to live in the open Air, except for a ſhort Time in the warmeſt Part of Summer.

The two 1ſt Sorts are extremely hardy, ſo are not injured by the Froſt, but the Trees are not of very long Duration, therefore young Plants ſhould be raiſed once in 3 or 4 Years, to preſerve the Kinds.

ELATERIUM. *See* Momordica.

ELATINE. *See* Linaria.

ELECAMPANE. *See* Inula.

ELEPHANTOPUS. *Lin. Gen. Pl.* 827. *Vaill. Act. Par.* 1719. *Dill. Hort. Elth.* Elephant's Foot.

The *Characters* are,

There are many Flowers collected together in one common large Involucrum which is permanent, and each Empalement contains 4 or 5 Florets; the Florets are tubulous and hermaphrodite; they have one Petal, which is Tongue-ſhaped; the Brim is narrow, and divided into 5 equal Parts; they have 5 very ſhort hairy Stamina, terminated by cylindrical Summits. In the Bottom is ſituated an oval Germen, ſupporting a ſlender Style, crowned by 2 ſlender Stigmas; the Germen becomes a ſingle compreſſed Seed crowned with Briſtles, and ſitting on a Placenta incloſed in the Empalement.

The *Species* are,

1. ELEPHANTOPUS *foliis oblongis ſcabris. Hort. Cliff.* 390. *Elephantopus* with oblong rough Leaves. This is the *Elephantopus conyzæ folio. Vaill. Mem. Acad. Scien.* 1719. Elephant's Foot with a Flea-bane Leaf.

2. ELEPHANTOPUS *foliis ovatis tomentoſis. Gron. Virg.* *Elephantopus* with oval woolly Leaves. *Elephantopus helenii folio, purpuraſcente flore. Houſt. MSS. Elephantopus* with an Elecampane Leaf, and a purpliſh Flower.

The 1ſt Sort grows naturally in both the *Indies*, I have received it from ſeveral Parts of *America*; this ſends out many oblong rough Leaves, which ſpread near the Ground, between theſe, in the Spring, ariſes a branching Stalk, little more than a Foot high. The Side Branches are ſhort, and generally terminated by 2 Heads of Flowers, each ſtanding upon a ſhort Foot Stalk. The Heads contain a great Number of hermaphrodite Florets, included in a common Involucrum, compoſed of 4 oval Leaves, ending in acute Points. The Florets are of a pale purple Colour. They appear in *July*, but are rarely ſucceeded by Seeds in *England*.

The 2d Sort grows naturally in *South Carolina*; the Plants of this have frequently come up as Weeds in the Earth, which has been ſent over from thence with other Plants; this hath ſeveral oval woolly Leaves, 4 Inches long, and 3 Inches broad, growing from the Root; theſe have many tranſverſe Nerves, running from the Mid-rib to the Sides; they ſpread flat on the Ground, and between theſe ariſe a ſtiff Stalk, about a Foot high, which divides into many Branches, each being terminated by 2 Flowers, compoſed of ſeveral Florets, incloſed in a four-leaved Involucrum; 2 of theſe Leaves are alternately larger than the other. The Involucrum is longer than the Florets, ſo they do but juſt appear within the 2 larger Leaves; the Flowers make no Appearance. They appear in *July*, but the Seeds never ripen here.

The 1ſt Sort hath a perennial Root, but an annual Stalk. If this is planted in Pots, and ſheltered in the Winter from Froſt, it may be preſerved ſeveral Years, and the Plants will annually flower; but the 2d Sort ſeldom continues longer than two Years.

Theſe Plants are propagated by Seeds, which ſhould be ſown on a hot Bed in Spring; and when the Plants are come up, they muſt be tranſplanted into Pots filled with freſh light Earth, and plunged into a hot Bed of Tanners Bark, obſerving to water and ſhade them until they have taken Root; then you ſhould let them have a large Share of freſh Air in warm Weather, and frequently refreſh them with Water.

ELEPHAS. *See* Rhinanthus.

ELICHRYSUM. *See* Gnaphalium.

ELLISIA. *Brown. Hiſt. Jam.* 262.

The *Characters* are,

The Flower has a ſmall cylindrical Empalement of one Leaf, indented in 5 Parts at the Brim; it has one tubulous Petal which is curved, the Brim is cut into 5 almoſt equal Segments which ſpread open; it has 4 Stamina, 2 of which are longer than the other, terminated by roundiſh Summits, and a roundiſh Germen, ſupporting a ſingle Style crowned by a thick Stigma. The Germen becomes a roundiſh Berry crowned by the Empalement, incloſing 8 Nuts, which have 2 Cells, with one angular Seed in each.

The Characters of the Flowers are copied from Dr. *Brown*'s *Hiſtory of Jamaica*, having never ſeen them myſelf; I have had many of the Plants in the *Chelſea* Garden near 20 Years, yet none of them have yet produced Flowers; but I have ſome Specimens of the Fruit from which they were raiſed, in my Collection.

We have but one *Species* of this Genus, *viz.*

ELLISIA. We have no *Engliſh* Name for this Plant; it was titled by Dr. *Brown* in Honour of Mr. *Ellis*, who has publiſhed ſome Obſervations on marine Productions of a Plant-like Nature.

This grows naturally in *Jamaica*, and other Iſlands in the *Weſt-Indies*; it has a ſhrubby Stalk, which divides into many ſlender angular Branches which are ligneous; theſe are garniſhed with oval Leaves which ſtand oppoſite; they are two Inches long, and an Inch and a Half broad; ſome of them are obtuſe, and others end in acute Points; they are ſawed on their Edges toward the Top, and are of a light green Colour, when they are in the Stove; but in Summer, when they are expoſed to the open Air, they change black, and continue ſo till after they have been ſome Time in the Stove again. The Flowers (according to Dr. *Brown*'s Figure) are diſpoſed in looſe Spikes, which come out from the Wings, and alſo at the End of the Branches; they are of the Lip, or, acccording to *Tournefort*, of the perſonated Kind, and are white. The Branches are armed at each Joint with 2 ſlender erect Thorns, which are ſituated oppoſite, immediately above the Leaves, and are unequal, being one longer than the other.

This Plant is propagated by Cuttings, which put out Roots with great Facility; theſe may be cut off from the Plants during any of the Summer Months, and if they are planted in Pots filled with light Earth, plunged into a moderate hot Bed of Tan, and ſhaded from the Sun, they will ſoon take Root; when they begin to ſhoot, they ſhould have free Air admitted to them, and gradually hardened; then they ſhould be carefully ſeparated, and each planted in a ſmall Pot filled with light Earth, placing them under Cover till they have taken new Root; then they may be removed into a warm ſheltered Situation, where they may remain till Autumn; when they muſt be removed into the Stove, and during the Winter Seaſon ſhould have a temperate Heat, in which they thrive beſt; for when too tenderly treated, their Shoots are weak, and ſubject to be attacked by Vermin, nor will they live through the Winter in a Green-houſe. In Summer they ſhould be placed in the open Air in a warm ſheltered Situation; with this Management the Plants have ſucceeded beſt.

ELM. *See* Ulmus.

EMERUS. *Tourn. Inſt. R. H.* 650. *Coronilla. Lin. Gen. Plant.* 789. Scorpion Sena, *vulgò*.

The *Characters* are,

The Flower hath a very ſhort Empalement of one Leaf, divided into 5 Parts, which is permanent. The Flower is of the Butterfly Kind. The Tails of the Petals are much longer than the Empalement. The Standard is narrow, and ſhorter than the Wings, over which it is arched. The Wings are large and concave. The Keel is Heart-ſhaped and reflexed. There are 10 Stamina in each, one of which ſtands ſeparate, the other 9 are joined; theſe are ſituated in the Standard. In the Empalement is ſituated an oblong ſlender Germen, ſupporting a ſlender Style, crowned by a taper Stigma. The Germen becomes a taper cylindrical Pod, ſwelling in thoſe Parts where the Seeds are lodged, which are alſo cylindrical.

The *Species* are,

1. EMERUS *caule fruticoſo, pedunculis longioribus.* Scorpion Sena with a ſhrubby Stalk, and longer Foot Stalks to the Flowers.

2. EMERUS *foliolis obcordatis, pedunculis brevioribus, caule fruticoſo.* Scorpion Sena with long Heart-ſhaped Leaves, ſhorter Foot Stalks to the Flowers, and a

ſhrubby Stalk. This is the *Emerus minor. Tourn. Inſt. R. H.* 650. Leſſer Scorpion Sena.

3. EMERUS *caule erecto, herbaceo, foliolis multijugatis, floribus ſingularibus alaribus, ſiliquis longiſſimis erectis.* Scorpion Sena with an erect herbaceous Stalk, the Leaves compoſed of many Pair of Lobes, ſingle Flowers proceeding from the Sides of the Stalks, and very long erect Pods.

The 1ſt of theſe Shrubs is very common in all the Nurſeries near *London*; this riſes with weak ſhrubby Stalks to the Height of 8 or 9 Feet, dividing into many ſlender Branches, garniſhed with winged Leaves, compoſed of 3 Pair of Lobes (or ſmall Leaves) terminated by an odd one. The Flowers come out upon long Foot Stalks from the Side of the Branches, 2 or 3 of theſe Foot Stalks ariſing from the ſame Point; each of theſe ſuſtains 2, 3, or 4 yellow Buterfly Flowers; theſe appear in *May*, and are frequently ſucceeded by long ſlender Pods, which are taper, ſwelling in thoſe Parts where the Seeds are lodged, and hang downward; theſe Shrubs continue long in flower, eſpecially in cool Seaſons, and frequently flower again in Autumn, which renders them valuable.

The 2d Sort riſes with many ſhrubby Stalks like the 1ſt, but not more than half the Height; this hath larger Leaves, which are of an oblong Heart-ſhape. The Flowers are rather larger than thoſe of the firſt, and ſtand upon ſhorter Foot Stalks; theſe Differences hold in the Plants raiſed from Seeds; therefore I think they may be allowed to ſtand as diſtinct Species, though there is a great Likeneſs at firſt Sight in them.

The Leaves of theſe Shrubs, when fermented in a Vat, in the ſame Manner as is practiſed with the Indigo Plants, will afford a Dye, very near to that of Indigo, but whether it will anſwer the ſame Purpoſes, is not yet certain, or whether it may be worth cultivating for that Purpoſe, either here or Abroad, is what we cannot yet determine; but there is ſo great Affinity between theſe Plants, and thoſe of the Indigo in their generical Characters; that Dr. *Tournefort*, and ſeveral other Botaniſts, have ranged them in the ſame Genus.

Theſe Shrubs are eaſily propagated by ſowing their Seeds (which they commonly produce in great Plenty) in *March*, upon a Bed of light ſandy Earth, obſerving to keep the Bed clear from Weeds; and in very dry Weather you muſt often refreſh the Bed with Water, which ſhould be given carefully, leſt the Seeds ſhould be waſhed out of the Ground by haſty Watering. When the Plants are come up, they muſt be kept clean from Weeds, and in very dry Weather, if they are watered, it will promote their Growth, and the *Michaelmas* following (if your Plants have thriven well) you may draw out the largeſt, which may be tranſplanted into a Nurſery, at 3 Feet Diſtance Row from Row, and one Foot aſunder in the Rows. This will give Room to thoſe Plants which are left to grow in the Seed Bed, in which Place they may remain another Year, when they will alſo be fit to tranſplant into a Nurſery, where they ſhould be 2 Years, when they will be fit to plant out, where they are to remain for good; in doing of which, you ſhould be careful in taking them up, not to break or wound the Roots, nor ſhould they remain too long in the Nurſery before they are tranſplanted, for they are ſubject to ſhoot downright Roots, which, when cut off, oftentimes proves the Death of the Tree. In all other Reſpects it muſt be treated like other flowering Shrubs, among which, this is commonly ſold at the Nurſeries. It may alſo be propagated by laying down the tender Branches, which will take Root in about a Year's Time, and may then be tranſplanted into a Nurſery, and managed as the ſeedling Plants.

The 3d Sort grows naturally in the *Weſt-Indies*, where *Plumier* firſt diſcovered it in the *French* Settlements, but it was found growing in Plenty, at *La Vera Cruz*, by the late Dr. *Houſtoun*, who ſent me the Seeds, which ſucceeded in the *Chelſea* Garden, where the Plants flowered, but did not perfect their Seeds, and the Plants being annual, the Species was loſt here. This riſes with a round herbaceous Stalk, 3 Feet high, garniſhed at each Joint, with one long winged Leaf, compoſed of about 20 Pair of Lobes, terminated by an odd one; theſe have obtuſe Points, and are of a deep green. The Flowers come out ſingly from the Side of the Stalk, immediately above the Foot Stalk of the Leaves, ſtanding upon ſlender Foot Stalks 2 Inches long; they are larger than thoſe of either of the former Sorts, and are of a pale yellow Colour; theſe are ſucceeded by ſlender compreſſed Pods, which are more than 6 Inches long, having a Border on each Side, and a Swelling where each Seed is lodged.

This is an annual Plant, whoſe Seeds muſt be ſown on a hot Bed in the Spring, and when the Plants are fit to remove, they ſhould be each planted in a ſmall Pot filled with light Kitchen Garden Earth, and plunged into a moderate hot Bed of Tanners Bark, ſhading them from the Sun, until they have taken new Root, then they muſt be treated in the ſame Manner as other exoticks from thoſe warm Countries. If theſe Plants are brought forward in Spring, and kept under a deep Frame in a Tan Bed, or plunged into the Bark Bed in the Stove, when they are grown too tall to remain under common Frames; they will ripen Seeds in *England*, for thoſe Seeds which I received did not arrive here till *May*, and yet thoſe Plants flowered well in *Auguſt*, but the Autumn coming on ſoon after, prevented their perfecting Seeds, and that Part of the Seed which I reſerved till the next Year, did not grow.

EMPETRUM. *Lin. Gen. Plant.* 977. *Tourn. Inſt. R. H.* 579. *Tab.* 421. Black-berried Heath.

The *Characters* are,

It hath male and female Flowers on different Plants; the male Flowers have a 3 pointed Empalement, which is permanent; they have 3 oblong Petals, which are narrow at their Baſe, and 3 long hanging Stamina, which are hairy, terminated by ſhort two-pointed Summits, which ſtand erect. The female Flowers have the ſame Empalement and Petals as the male, but no Stamina. In the Center is ſituated a depreſſed Germen, ſupporting 9 reflexed ſpreading Stigmas. The Germen becomes a depreſſed round Berry of one Cell, incloſing 9 Seeds placed circularly.

We have but one *Species* of this Genus, *viz.*

EMPETRUM *procumbens. Hort. Cliff.* 470. Trailing Berry-bearing Heath. This is the *Empetrum montanum, fructu nigro. Tourn.* Black-berried Heath, Crow Berries, or Crake Berries.

This little Shrub grows wild upon the Mountains of

Staffordſhire, *Derbyſhire*, and *Yorkſhire*, and is ſeldom propagated in Gardens, unleſs for Variety; but it may be cultivated in ſhady Places, and will thrive very well in Gardens, where the Soil is ſtiff. The Plants ſhould be procured from the Places where they grow naturally, for the Seeeds remain a Year in the Ground before they vegetate, and afterward are very ſlow in their Growth, ſo they are not worth the Trouble of cultivating from Seeds. If the Plants are planted on a moiſt boggy Soil in Autumn, they will get Roots in the Winter, and will require no farther Care than to clear them from Weeds; theſe Shrubs commonly grow upon the Tops of wild Mountains, where the Soil is generally peaty, and full of Bogs; the Heath Cocks feed much upon the Berries of this Plant; ſo that whereever there is Plenty of theſe low Shrubs, there are commonly many of theſe Fowls to be found.

EMUSCATION, the Clearing a Tree of Moſs, *Lat.*

ENUCLEATION, a Taking out the Nut or Kernel of any Fruit, *Lat.*

ENULA CAMPANA. *See* Inula.

EPHEDRA. *Lin. Gen. Plant.* 1007. *Tourn. Inſt.* 663. *Tab.* 477. Shrubby Horſe Tail, *vulgò.*

The *Characters* are,

It hath male and female Flowers in different Plants; the male Flowers are collected in Katkins, which are ſcaly, under each Scale is a ſingle Flower; theſe have no Petals, but 7 Stamina, which are joined in Form of a Column, and are terminated by roundiſh Summits. The female Flowers have an oval Perianthium, compoſed of five Series of Leaves, which alternately lie over the Diviſions of the lower Range; theſe have no Petals, but have 2 oval Germina, ſitting upon the Perianthium, ſupporting ſhort Styles, crowned by ſingle Stigmas. The Germina afterward turn to oval Berries, each having two Seeds.

We have but one *Species* of this Genus, *viz.*

Ephedra *pedunculis oppoſitis, amentis geminis. Hort. Cliff.* 465. Shrubby Horſe Tail with oppoſite Foot Stalks, and twin Katkins. This is the *Ephedra maritima minor. Tourn.* Leſſer Sea Horſe Tail.

This is a low ſhrubby Plant, which grows naturally upon the Rocks by the Sea, in the South of *France*, in *Spain*, and *Italy*; it is alſo preſerved in ſeveral Gardens for Variety, but has little Beauty. This hath a low ſhrubby Stalk, which puts out a few ſhort Branches, riſing about 2 Feet high, which have many protuberant Joints, at which come out ſeveral narrow ruſhy Leaves, like thoſe of the Horſe Tail, which continue green all the Year; the Plants rarely flower in this Country.

It may be propagated by Offsets, which the Plants ſend forth in great Plenty, for the Roots creep under Ground, and ſend forth Suckers, which may be taken off and tranſplanted in Spring. They love a pretty moiſt ſtrong Soil, and endure the Cold of our ordinary Winters very well in the open Air. Some of theſe Plants were formerly preſerved in Pots, and houſed in Winter; but by later Experience they are found to thrive better in the full Ground.

EPHEMERUM. *See* Tradeſcantia.

EPIGÆA. *Lin. Gen. Plant.* 486. *Memecylum. Mitch.* 13. Trailing *Arbutus.*

The *Characters* are,

The Flower hath a double Empalement, which is permanent; the outer is compoſed of 3, and the inner of one Leaf, divided at the Top into 5 Parts. The Flower is of the Salver Shape, with one Petal having a cylindrical Tube, which is longer than the Empalement, and hairy within. The Brim is cut into 5 Parts, which ſpread open. It hath 10 ſlender Stamina the Length of the Tube, which are fixed to the Baſe of the Petal, and are terminated by oblong Summits. In the Center is ſituated a globular hairy Germen, crowned by an obtuſe quinquefid Stigma. The Germen becomes a depreſſed, half globular, 5 cornered Fruit, having 5 Cells, opening with 5 Valves, containing ſeveral Seeds.

We know but one *Species* of this Genus, *viz.*

Epigæa. *Lin. Gen. Plant.* 486. Trailing *Arbutus.*

This Plant grows naturally in *North America*, from whence it has been introduced to the *Engliſh* Gardens. It is a low Plant with a trailing ſhrubby Stalk, which puts out Roots at the Joints, and multiplies very faſt. The Stalks are garniſhed with oblong rough Leaves, waved on their Edges. The Flowers are produced at the End of the Branches, in looſe Bunches; theſe are white, and divided at the Top into 5 acute Segments, which ſpread open in Form of a Star. It flowers in *July*, but doth not produce Fruit in *England.*

The Plants are eaſily propagated by their trailing Stalks, which put out Roots at the Joints, ſo may be cut off from the old Plant, and placed in a ſhady Situation, and a moiſt Soil; the beſt Time for this is in Autumn, that the Plants may be well rooted before the Spring. If the Winter ſhould prove very ſevere, it will be proper to lay a few dried Leaves, or ſome light Covering over them, which will prevent their being injured by Froſt; after they are well rooted, they require no other Care but to keep them clean from Weeds.

EPILOBIUM. *Lin. Gen. Plant.* 426. *Chamænerion. Tourn. Inſt.* Willow Herb, or *French* Willow.

The *Characters* are,

The Empalement of the Flower is compoſed of 4 oblong pointed Leaves, which are coloured. The Flower hath 4 bordered Petals, which ſpread open, and 8 Stamina, which are alternately ſhorter, terminated by oval compreſſed Summits. Below the Flower is ſituated a long cylindrical Germen, ſupporting a ſlender Style, crowned by an obtuſe quadrifid Stigma. The Germen becomes a long cylindrical furrowed Capſule, with 5 Cells filled with oblong Seeds crowned with Down.

The *Species* are,

1. Epilobium *foliis lanceolatis integerrimis. Lin. Hort. Cliff. Epilobium* with Spear-ſhaped Leaves, which are entire. This is the *Chamænerion latifolium vulgare. Tourn.* Common broad-leaved Willow Herb, or *French* Willow.

2. Epilobium *foliis oppoſitis lanceolatis ſerratis. Lin. Hort. Cliff.* 145. *Epilobium* with oppoſite Spear-ſhaped Leaves, which are ſawed on their Edges. This is the *Chamænerion villoſum, magno flore purpureo. Tourn. Inſt. R. H.* 303. Hoary Willow Herb with a large Flower, commonly called Codlins and Cream.

There are ſeveral other Species of this Genus, ſome of which grow naturally in ſhady Woods, and moiſt Places, in moſt Parts of *England*, where they are troubleſome Weeds, ſo are ſeldom admitted into Gardens.

The 1ſt Sort here mentioned was formerly planted in Gardens, for the Beauty of its Flowers; but as it uſually ſpreads far by the creeping Roots, and over-runs all the neighbouring Plants, it has been caſt out of moſt Gardens, but in ſome low moiſt Places, or in great Shade, if there was a Place aſſigned for this Plant, it will make a good Appearance when it is in Flower, and theſe Flowers are very proper to cut for Baſons to adorn Chimnies in the Summer Seaſon. This uſually grows about 4 Feet high, with ſlender ſtiff Branches beſet with Leaves, reſembling thoſe of the Willow, from whence it had the Name of Willow Herb, or *French* Willow. On the upper Part of the Stalks the Flowers are produced in long Spikes, which are of a fine Peach Colour; and, if the Seaſon is not very hot, they will continue near a Month in Beauty. This Sort is found wild in divers Parts of *England*, but ſeveral Botaniſts have ſuppoſed it was only found in ſuch Places where the Plants had been caſt out of Gardens; however, I think it muſt be allowed to be a Native of this Country, ſince it is found in great Plenty in Woods at a great Diſtance from any Habitation, particularly in *Charlton Foreſt*, and other Woods in *Suſſex*. It is a great Creeper at the Root, ſo may be eaſily propagated.

There is a Variety of this with white Flowers, which is planted in Gardens, but differs only in the Colour of the Flower; however ſome are fond of propagating theſe Varieties, for which Reaſon I mentioned it here.

The 2d Sort is found wild by the Side of Ditches and Rivers in many Parts of *England*; this Plant grows about 3 Feet high, and produces its Flowers on the Top of the Stalks, but theſe are much leſs beautiful than thoſe of the 1ſt; and the Plant, being a great Rambler at the Root, is never admitted into Gardens. The Leaves of this Plant being rubbed, emit a Scent like ſcalded Apples, from whence ſome have given the Name of Codlins and Cream to this Plant.

EPIMEDIUM. *Lin. Gen. Plant.* 138. *Tourn. Inſt. R. H.* 232. *Tab.* 117. *Raii. Meth. Pl.* 129. Barrenwort.

The *Characters* are,

The Flower hath a three-leaved Empalement, which falls off. It hath 4 obtuſe oval Petals, which are concave, and ſpread open, and 4 Nectariums which are Cup-ſhaped, obtuſe at the Bottom, and as large as the Petals. It hath 4 Stamina, terminated by oblong, erect, bilocular Summits. The oblong Germen is ſituated at the Bottom, ſupporting a ſhort Style, crowned by a ſingle Stigma. The Germen afterward becomes an oblong pointed Pod, with one Cell, opening with two Valves, incloſing many oblong Seeds.

This Plant hath a creeping Root, from which ariſe many Stalks about 9 Inches high, divided at the Top into 3, each of which is again divided into 3 ſmaller; upon each of theſe ſtands a ſtiff Heart-ſhaped Leaf, ending in a Point, of a pale green on the upper Side, but gray on the under. A little below the firſt Diviſion of the Stalk, comes out the Foot Stalk of the Flowers, which is near 6 Inches long, dividing into ſmaller, each of theſe ſuſtaining 3 Flowers; theſe are compoſed of 4 Leaves, placed in Form of a Croſs, they are of a reddiſh Colour, with yellow Stripes on the Border. In the Center of the Flower ariſes the Style, ſituated upon the Germen, which turns to a ſlender Pod, containing many oblong Seeds. It flowers in *May*, and the Leaves decay in Autumn, but ſeldom ripens Seeds with us; this may be owing to its ſpreading Roots, which exhauſt the Nouriſhment from the Flowers and Fruit, as is frequently obſerved in many other Plants. The Roots, if planted in a good Border, ſhould be every Year reduced, ſo as to keep them within Bounds, otherwiſe they will ſpread and interfere with the neighbouring Plants.

EPIPHYLLOSPERMOUS PLANTS [of ἐπὶ, upon, Φύλλον, a Leaf, and Σπέρμα; *Gr.* Seed,] ſuch Plants as bear their Seeds on the Back of their Leaves, the ſame as Capillaries.

EQUISETUM, Horſe-Tail. There are ſeveral Species of this Plant, which are found in *England*, on the Sides of Ditches, or in ſhady Woods; but as they are never cultivated in Gardens, I ſhall paſs them over in this Place.

ERANTHEMUM. *See* Adonis.

ERICA. *Lin. Gen. Plant.* 435. *Tourn. Inſt. R. H.* 602. *Tab.* 373. Heath; in *French*, *Bruyere*.

The *Characters* are,

The Flower hath a coloured permanent Empalement of 4 oval erect Leaves. It hath one ſwelling Petal, which is erect and quadrifid, and 8 hairy Stamina, which are fixed to the Receptacle, and terminated by bifid Summits. In the Bottom is ſituated the roundiſh Germen, ſupporting a declining Style, which is longer than the Stamina, crowned by a 4 cornered Stigma. The Germen afterward becomes a round Capſule, having 4 Cells, filled with ſmall Seeds.

The *Species* are,

1. ERICA *antheris bicornibus incluſis, corollis inæqualibus, campanulatis mediocribus foliis oppoſitis ſagittatis. Lin. Sp. Plant.* 352. Heath with two Horns including the Summits, Bell-ſhaped unequal Petals, and middling Arrow-pointed Leaves placed oppoſite. This is the *Erica vulgaris glabra. C. B.* Common ſmooth Heath.

2. ERICA *antheris bifidis ſimplicibus exſertis, corollis campanulatis longioribus, foliis quinis linearibus patentibus. Lin. Sp. Plant.* 355. Heath with a ſingle bifid Summit ſtanding out, a longer Bell-ſhaped Petal, and five narrow ſpreading Leaves. This is the *Erica foliis coridis, multiflora. J. B.* Pine-leaved Heath with many Flowers.

3. ERICA *antheris bicornibus incluſis, corollis ovatis racemoſis, foliis ternis glabris linearibus. Lin. Sp. Plant.* 352. Heath with two Horns including the Summits, oval branchy Petals, and three long narrow ſmooth Leaves. This is the *Erica humilis, cortice cinereo, arbuti flore. C. B. P.* 486. Dwarf Heath with an Aſh coloured Bark, and Strawberry Tree Flower.

4. ERICA *antheris ſimplicibus incluſis, corollis ovatis irregularibus, floribus ternoracemoſis, foliis ternis ciliatis. Læfl: Epiſt.* 2. p. 9. *Lin. Sp. Plant.* 354. Heath with ſingle Summits, oval irregular Petals, triple branching Flowers, and hairy Leaves placed by Threes.

Theſe Plants grow wild upon barren uncultivated Places, in divers Parts of *England*; but notwithſtanding their Commonneſs, yet they deſerve a place in ſmall Quarters of humble flowering Shrubs, where, by the Beauty and long Continuance of their Flowers, together with their Diverſity of the Leaves, they make an agreeable Variety.

Theſe are ſeldom propagated in Gardens, and ſo not to be had from the Nurſeries, but may be taken up, with a Ball of Earth to their Roots, from the natural

Places of their Growth in Autumn, and may be tranſplanted into the Garden. The Soil where they are planted ſhould not be dunged, nor ſhould you beſtow any other Culture on them, than clearing them from Weeds; for the leſs the Ground is dug, the better theſe will thrive; for they commonly ſhoot their Roots near the Surface, which, in digging, are ſubject to be hurt, whereby the Plant is often deſtroyed; theſe may alſo be propagated by Seeds, but this being a tedious Method, the other is much preferable to it.

ERICA BACCIFERA. *See* Empetrum.

ERIGERON. *Lin. Gen. Plant.* 835. *Senecionis. Sp. Dill. Conyzella. Dill.* Groundſel.

The *Characters* are,

It hath a compound radicated Flower, compoſed of many hermaphrodite Florets, which form the Diſk, and female half Florets, which make the Rays; theſe are contained in one oblong ſcaly Empalement. The hermaphrodite Florets are Funnel-ſhaped, and cut at Top into 5 Parts; theſe have 5 hairy Stamina, terminated by cylindrical Summits; they have a ſmall Germen, crowned with Down, longer than the Petal. On the Germen ſits a ſlender Style the Length of the Down, crowned by 2 oblong Stigmas; the Germen becomes a ſmall oblong Seed, crowned with long Down. The female half Florets, which compoſe the Rays, have one Side of their Petals ſtretched out like a Tongue; theſe have no Stamina, but a ſmall downy Germen, ſupporting a ſlender Style, which is hairy, crowned by 2 ſlender Stigmas. The Germen becomes a Seed like the hermaphrodrite Florets.

The *Species* are,

1. Erigeron *pedunculis unifloris lateralibus, calycibus ſquarroſis. Hort. Upſ.* 258. Groundſel with one Flower on a Foot Stalk, proceeding from the Side of the Stalk, and a rough Empalement. This is the *Conyza mas Theophraſti, major Dioſcoridis. C. B. P.* Male Fleabane of *Theophraſtus*, greater Fleabane of *Dioſcorides*.

2. Erigeron *pedunculis alternis, unifloris. Hort. Cliff.* Groundſel with alternate Foot Stalks having one Flower. This is the *Conyza cærulea acris.* Blue acrid Fleabane.

3. Erigeron *foliis baſi revolutis. Lin. Sp. Plant.* 863. Groundſel whoſe Leaves are curved at their Baſe. This is the *Senecio Bonarienſis purpuraſcens, foliis imis coronopi. Hort. Elth.* 344. Purpliſh Groundſel of *Buenos Ayres*, with under Leaves like Hartſhorn Plantain.

4. Erigeron *caule floribuſque paniculatis. Hort. Cliff.* 407. Groundſel with a paniculated Stalk and Flowers. This is the *Virga aurea Virginiana annua. Zan. Hiſt.* 205. Annual *Virginia* Golden Rod.

5. Erigeron *caule ſubbifloro, calyce ſubhirſuto Lin. Sp. Plant.* 864. Grounſel with two Flowers on a Stalk, and hairy Empalements. This is the *Conyza cærulea Alpina. C. B. P.* 265. Blue *Alpine* Fleabane.

The 1ſt Sort grows naturally in the South of *France* and in *Italy*; this hath a perennial Root, from which ariſe ſeveral upright Stalks near 3 Feet high, garniſhed with oblong oval Leaves which are hairy, and ſit cloſe to the Stalk; they are placed alternate, and are 4 Inches long, and 2 broad in the Middle; theſe in warm Weather ſweat out a clammy Juice. The Flowers are produced ſingle upon pretty long Foot Salks, ſome ariſing from the Side of the Stalk, and others terminate it; they are yellow, and have an agreeable Odour. They flower in *July*, and the Seeds ripen in Autumn.

This Plant is propagated by Seeds, which, if ſown in Autumn, will more certainly ſucceed, than thoſe ſown in Spring. When the Plants come up, they ſhould be thinned if too cloſe, and kept clean from Weeds till Autumn, when they ſhould be tranſplanted where they are to remain. They delight in a dry Soil, and ſunny Expoſure. The 2d Year the Plants will flower and perfect Seeds, but the Roots will continue ſeveral Years, and annually produce their Flowers and Seeds.

The other 4 Sorts are preſerved in Botanick Gardens for Variety, but are ſeldom admitted into Gardens for Pleaſure. The 5th Sort is a perennial Plant, which grows naturally on the *Alps*, and may be propagated by Seeds in the ſame Manner as the firſt Sort, but ſhould have a ſhady Situation, and a moiſt Soil.

The others are annual Plants, which, if once admitted into a Garden, and ſuffered to ſcatter their Seeds, will become very troubleſome Weeds there.

ERINUS. *Lin. Gen. Plant.* 689. *Ageratum. Tourn.*

The *Characters* are,

The Flower hath a permanent Empalement, compoſed of 5 equal Leaves, it hath one Petal which is tubulous, and of the ringent Kind, cut into 5 eqnal Segments which ſpread open, 3 ſtanding upward form the upper Lip, and 2 turn downward. It hath 4 Stamina ſituated within the Tube, 2 of which are a little longer than the other, terminated by ſmall Summits. In the Bottom of the Tube is the oval Germen, ſupporting a ſhort Style, crowned by a Head-ſhaped Stigma. The Germen becomes an oval Capſule, covered by the Empalement, having 2 Cells filled with ſmall Seeds.

The *Species* are,

1. Erinus *floribus racemoſis. Lin. Sp. Pl.* 630. *Erinus* with branching Flowers. This is the *Ageratum ſerratum Alpinum glabrum, flore purpuraſcente. Tourn.* Smooth ſawed *Alpine Ageratum*, having a purpliſh Flower.

2. Erinus *tomentoſus, caulibus procumbentibus, floribus ſeſſilibus axillaribus.* Woolly *Erinus* with trailing Stalks, and Flowers ſitting cloſe to their Sides. This is the *Ageratum Americanum procumbens, gnaphalii facie, floribus ad foliorum nodos.* Trailing *American Ageratum* with the Appearance of Cudweed, and Flowers growing at the Knots of the Leaves.

3. Erinus *caule erecto, foliis lanceolatis oppoſitis, floribus laxè ſpicatis terminalibus.* *Erinus* with an upright Stalk, Spear-ſhaped Leaves placed oppoſite, and Flowers growing in looſe Spikes, terminating the Stalks. This is the *Ageratum Americanum erectum ſpicatum, flore purpureo. Houſt. Mſſ.* Upright *American Ageratum* with Spikes of purple Flowers.

4. Erinus *caule erecto fruticoſo, foliis ovato-lanceolatis ſerratis, alternis, floribus axillaribus.* *Erinus* with a ſhrubby erect Stalk, oval Spear-ſhaped ſawed Leaves, placed alternate, and Flowers on the Sides of the Stalk. This is the *Ageratum fruteſcens, foliis dentatis latioribus, villoſum. Houſt. Mſſ.* Shrubby hoary *American Ageratum* with broad indented Leaves.

5. Erinus *caule ramoſo procumbente, foliis ovatis ſerratis glabris oppoſitis, floribus verticillatis.* *Erinus* with a branching trailing Stalk, oval, ſmooth, ſawed Leaves placed oppoſite, and Flowers growing in Whorls round the Stalks. *Ageratum Americanum procumbens, foliis ſubrotundis ſerratis glabris. Houſt. Mſſ.* Trailing *American Ageratum* with roundiſh, ſmooth, ſawed Leaves.

6. Erinus *caulibus procumbentibus, foliis ovatis glabris, floribus ſingulis alaribus, pedunculis longioribus. Erinus* with trailing Stalks, oval ſmooth Leaves, and ſingle Flowers on the Sides of the Stalks, having longer Foot Stalks. This is the *Ageratum Americanum, procumbens, glabrum, floribus luteis, longis pediculis inſidentibus. Houſt. MSS.* Smooth trailing *American Ageratum*, with yellow Flowers ſitting upon long Foot Stalks.

The 1ſt Sort grows natually on the *Alps* and *Helvetian* Mountains; this is a very low Plant, whoſe Leaves lie cloſe to the Ground, growing in cloſe Tufts; they are about Half an Inch long, and one Eighth of an Inch broad, ſawed on their Edges, and of a dark green; between theſe ariſe the Flower Stalk, which is ſcarce 2 Inches high, ſupporting a looſe Bunch of purple Flowers, which ſtand erect. Theſe appear in *May*, and ſometimes are ſucceeded by ripe Seeds in *July*.

It is propagated by parting the Roots, the beſt Time for this is in Autumn; they muſt have a ſhady Situation, and a loamy Soil without Dung, for in rich Earth theſe Plants are very ſubject to rot.

The 2d Sort was ſent me by the late Dr. *Houſtoun*, from *La Vera Cruz*, where he found it growing naturally; this ſends out ſeveral trailing Stalks, about 6 Inches long, cloſely garniſhed with ſmall oval Leaves, placed on every Side; they are very white, and woolly, and at the Joints juſt above the Leaves, come out the Flowers, ſitting very cloſe to the Stalks; theſe are white, and are ſucceeded by round Capſules, having 2 Cells, filled with ſmall Seeds; this Plant has great Reſemblance at a diſtance to the Sea Cudweed.

The 3d Sort was diſcovered in the ſame Country; this hath an upright Stalk 2 Feet high, garniſhed with Spear-ſhaped Leaves placed oppoſite, and toward the Top of the Stalk is produced two ſmaller Branches placed oppoſite, which ſtand erect; theſe, and the middle Stalk, are terminated by looſe Spikes of purple Flowers, ſucceeded by oval Veſſels filled with ſmall Seeds.

The 4th Sort riſes with a ſhrubby Stalk about 4 Feet high, dividing into ſeveral ſmall Branches, which are hairy; theſe are garniſhed with oval Spear-ſhaped Leaves deeply ſawed on their Edges, placed alternate, and have pretty long Foot Stalks. The Flowers come come out from the Side of the Stalks, ſometimes ſingle, at other Times 2 or 3 at a Joint, ſitting pretty cloſe to the Stalks, they are white, and are ſucceeded by round Seed Veſſels, filled with ſmall Seeds.

The 5th Sort ſends out many trailing ſmooth Stalks, which branch out very much on every Side; they grow about 7 or 8 Inches long, and are garniſhed with ſmall oval Leaves placed oppoſite. The Flowers come out in Whorls, ſitting very cloſe to the Stalks, they are white, and make but little Appearance; theſe are ſucceeded by round Capſules filled with ſmall Seeds.

The 6th Sort ſends out ſeveral trailing Stalks about 6 Inches long, which divide into many ſmaller Branches, garniſhed with ſmall oval Leaves, ſtanding oppoſite. The Flowers come out ſingly from the Side of the Stalk, of a bright yellow, and ſtand on long ſlender Foot Stalks, theſe are ſucceeded by oval Seed Veſſels filled with ſmall Seeds.

The 4th Sort is a perennial ſhrubby Plant, which will continue ſeveral Years, if kept in a warm Stove; but the 2d, 3d, 5th, and 6th Sorts are annual, decaying ſoon after they have perfected their Seeds.

Theſe are propagated by Seeds, which ſhould be ſown in Pots filled with light Earth, and plunged into a moderate hot Bed, where ſometimes the Plants will come up in 5 or 6 Weeks; and at other Times the Seeds do not vegetate till the following Spring; this happens when they have been kept long after they were gathered. When the Plants are fit to remove, they ſhould be each planted in a ſmall Pot filled with light Earth, not too rich with Dung, and then plunged into a hot Bed of Tanners Bark; when they have taken new Root, they ſhould be treated as other Plants from thoſe Countries, by admitting proper Air to them at all Times when the Weather is warm, and frequently refreſhing them with Water; with this Management the annual Sorts will flower in *July* and *Auguſt*, and frequently ripen their Seeds in Autumn, if the Plants are brought forward early in Spring, otherwiſe the Winter will come on before their Seeds ripen.

The ſhrubby Kind muſt be placed in the Bark Stove in Autumn, and during the Winter the Plants ſhould be frequently refreſhed with Water, but it muſt not be given them in large Quantities, nor too often repeated in cold Weather, for Moiſture will then deſtroy them; the 2d Year the Plants will flower and perfect Seeds.

ERIOCEPHALUS. *Hort. Elth.* 110. *Lin. G. P.* 890.

The *Characters* are,

It hath a radiated Flower, compoſed of female half Florets which form the Rays, and hermaphrodite Florets, which form the Diſk; theſe are included in one common ſcaly Empalement. The hermaphrodite Flowers are Funnel-ſhaped, and cut into 5 Parts at the Brim, which ſpread open; theſe have 5 ſhort hairy Stamina, terminated by cylindrical Summits; they have a ſmall naked Germen, ſupporting a ſingle Style, crowned by a pointed Stigma, theſe are barren. The female Flowers have their Petals ſtretched out on one Side like a Tongue, and divided at the End into 3 ſmall Lobes; theſe have no Stamina, but an oval naked Germen, with a ſingle Style, crowned by an inflexed Stigma; theſe have one naked Seed ſitting on the naked plain Receptacle.

We have but one *Species* of this Genus, *viz.*

Eriocephalus. *Lin. Sp. Pl.* 926. We have no *Engliſh* Title for it. This is the *Eriocephalus ſempervirens, foliis faſciculatis & digitatis. Hort. Elth.* 132. Evergreen *Eriocephalus* with fingered Leaves growing in Bunches.

This Plant hath a ſhrubby Stalk, which riſes from 3 to 4 Feet high, putting out many Side Branches the whole Length; theſe are cloſely garniſhed with white woolly Leaves, which come out in Cluſters; ſome of theſe are taper and entire, others are divided into 3 or 5 Parts, which ſpread open like a Hand; they have a ſtrong Smell when bruiſed, approaching to that of the Lavender Cotton, but not quite ſo rank. The Flowers are produced in ſmall Cluſters at the Extremity of the Branches, ſtanding erect, they are tubulous. The female Florets which compoſe the Rays, form a Hollow, in the Middle of which the Hermaphrodite Flowers are ſituated which form the Diſk. The Border is white, with a little reddiſh Caſt on the Inſide, and the Diſk is of a purpliſh Colour. The Flowers appear in Autumn, but do not ripen Seeds here.

This Plant is propagated by Cuttings, which may be planted any Time from *May*, to the Middle of *Auguſt*, for if they are planted later in the Seaſon, there will not be Time for them to get good Root before Winter; theſe Cuttings ſhould be planted in ſmall Pots filled with light Earth, and plunged into a very moderate hot Bed, where they ſhould be ſhaded from the Sun till they have taken Root; they muſt be refreſhed with Water 2 or 3 Times a Week, but ſhould not have too much at each Time, for much Moiſture is very hurtful to them. When the Cuttings have taken Root, they ſhould be gradually inured to the open Air, to prevent their Shoots from being drawn up weak; afterward they ſhould be removed into the open Air, and placed in a ſheltered Situation, where they may remain till *October*, when they muſt be removed into an airy Glaſs Caſe, that they may have as much Sun as poſſible, and enjoy the free Air in mild Weather, but ſecured from Froſt and damp Air, either of which will ſoon deſtroy them. During the Winter they muſt be ſparingly watered; but, in the Summer, when the Plants are placed in the open Air, they will require to be frequently refreſhed with Water in hot Weather.

Theſe Plants retain their Leaves all the Year, ſo add to the Variety of Exoticks in the Winter Seaſon.

ERUCA. *Tourn. Inſt. R. H.* 226. *Tab.* 111. *Braſſica. Lin. Gen.* 734. Rocket; in *French*, *Roquette*.

The *Characters* are,

The Empalement is compoſed of 4 *oblong Leaves, which ſtand erect, forming a Tube. The Flower hath* 4 *oblong Petals placed in Form of a Croſs, which are rounded at their Ends, where they are broad, but narrow at their Baſe, and are much longer than the Empalement. It hath* 6 *Stamina,* 4 *of which are a little longer than the Empalement; the other* 2 *are ſhorter, terminated by acute Summits. It hath an oblong taper Germen, ſupporting a ſhort Style, crowned by an obtuſe bifid Stigma. The Germen becomes a taper-cornered Pod with* 2 *Cells, filled with roundiſh Seeds.*

The *Species* are,

1. ERUCA *foliis pinnato-laciniatis, laciniis exterioribus majoribus.* Rocket with Wing-ſhaped jagged Leaves, whoſe outer Segments are the largeſt. This is the *Eruca ſativa major annua, flore albo ſtriato. J. B.* Greater Garden annual Rocket with a white ſtriped Flower.

2. ERUCA *foliis lanceolatis, pinnato-dentatis, caule nudo ſimplici.* Rocket with Spear-ſhaped indented Leaves, and a naked ſingle Stalk. This is the *Eruca bellidis folio. Mor. Hiſt.* Rocket with a Daiſy Leaf.

3. ERUCA *foliis pinnatis glabris, caule ramoſo, floribus terminalibus.* Rocket with winged ſmooth Leaves, a branching Stalk terminated by Flowers. This is the *Eruca tenuifolia perennis, flore luteo. J. B.* 2. 861. Narrow-leaved perennial Rocket with a yellow Flower.

4. ERUCA *foliis dentato-pinnatifidis hirſutis, caule hiſpido, ſiliquis lævibus.* Rocket with indented, Wing-pointed, hairy Leaves, a rough Stalk, and ſmooth Pods. *Eruca ſylveſtris, major, lutea, caule aſpero. C. B. P.* Greater wild Saffron-coloured Rocket with a rough Stalk.

5. ERUCA *foliis pinnatis, foliolis lanceolatis pinnatifidis. Prod. Leyd.* 342. Rocket with winged Leaves, whoſe Lobes are Spear-ſhaped, and Wing-pointed. *Eruca Tanacetifolia. H. R. Par.* Rocket with a Tanſy Leaf.

6. ERUCA *foliis ſinuato-pinnatis, ſeſſilibus, caule ramoſo.* Rocket with Wing-ſhaped ſinuated Leaves, ſitting cloſe to the Stalks, which are branching. This is the *Eruca ſicula Burſæ paſtoris folio. C. B. P.* 98. *Sicilian* Rocket with a Shepherd's Purſe Leaf.

The 1ſt Sort is an annual Plant, which was formerly much cultivated in Gardens as a Sallad Herb, but at preſent is little known, being long rejected on Account of its ſtrong ungrateful Smell. It ſtands in the Liſt of medicinal Plants, but at preſent is ſeldom uſed, though it is reckoned a Provocative and a good Diuretick. If it is propagated for Sallads, the Seeds ſhould be ſown in Drills, as uſually practiſed for other ſmall Sallad Herbs; for it muſt be eaten young, otherwiſe it will be too ſtrong for moſt Palates. The Winter and Spring Seaſons are the Times when this Herb is uſed, for when it is ſown in the Summer, the Plants ſoon run up to Seed, and are then too rank. Where it is cultivated for the Seed, which is ſometimes uſed in Medicine, they ſhould be ſown in *March*, on an open Spot of Ground; and when the Plants have put out 4 Leaves, the Ground ſhould be hoed to deſtroy the Weeds, and the Plants thinned, ſo as to leave them 3 or 4 Inches aſunder; in about 5 Weeks after, the Ground ſhould be a 2d Time hoed to deſtroy the Weeds, which, if well performed, will prevent them from growing to injure the Plants, till the Seeds are ripe; when the Plants ſhould be drawn up, and ſpread upon Cloths in the Sun for 2 or 3 Days to dry, then the Seeds may be beaten out of the Pods, and put up for Uſe.

The 2d Sort grows naturally in the South of *France* and *Italy*, where it is often eaten as a Sallad Herb; this hath many Spear-ſhaped Leaves ariſing from the Root, which are 4 or 5 Inches long, and one Inch broad in the Middle, regularly indented on their Edges, and ſpread on the Ground; the Stalks are ſingle, and riſe about a Foot high; they are naked, ſeldom having more than one Leaf, which is ſituated at the Bottom; the Flowers grow in looſe Bunches on the Top of the Stalks, ſucceeded by Pods 2 Inches long, having 2 Cells, filled with ſmall round Seeds. This is an annual Plant, and may be propagated as the former.

The 3d Sort grows naturally about *Paris*, and in many Parts of *Europe*; the Leaves are narrow, and regularly divided like a winged Leaf; the Stalks branch out upward, and are terminated by looſe Spikes of yellow Flowers. This hath a perennial Root, and annual Stalk.

The 4th Sort grows naturally upon old Walls and Buildings in many Parts of *England*, where it continues flowering all the Summer, but is rarely admitted into Gardens. It is ſometimes uſed in Medicine.

The 5th Sort grows naturally about *Turin*, from whence I received it. This hath fine divided Leaves, ſomewhat like thoſe of Tanſey, but are of a hoary green Colour; the Stalks riſe a Foot and a Half high, which are fully garniſhed with Leaves of the ſame Form, but gradually diminiſh in their Size upward; the Flowers are produced in Cluſters at the Top of the Stalks, they are ſmall, and of a pale yellow Colour; theſe are ſucceeded by ſlender taper Pods 2 Inches long, which contain 2 Rows of ſmall round Seeds.

The 6th Sort grows naturally in *Italy* and *Spain*; this is an annual Plant, with many oblong Leaves, which are ſmooth and regularly ſinuated on their Sides, in Form of a winged Leaf; they are 5 or 6 Inches long, and one Inch and a Half broad, of a light green, having a hot biting Taſte; the Stalks riſe about a Foot high, they are ſtrong, and divide into ſeveral Branches; theſe are garniſhed with a ſingle Leaf at each Joint, ſhaped like thoſe below, but ſmaller. The Flowers are produced in looſe Cluſters at the End of the Branches; theſe are white, and near as large as thoſe of the Garden Rocket, and are ſucceeded by taper Pods 3 Inches long, containing 2 Rows of round Seeds.

Theſe Plants are preſerved in ſome Gardens for the Sake of Variety, therefore they are here mentioned; and thoſe who are inclined to cultivate them, may do it by ſowing their Seeds on a Bed of light Earth in an open Situation; and when the Plants come up, they will require no other Culture but to thin them, and keep them clear from Weeds. They flower in *June* and *July*, and their Seeds ripen in *Auguſt*.

ERUCAGO. *See* Bunias.

ERVUM. *Lin. Gen. Pl.* 784. *Tourn.* Bitter Vetch.

The *Characters* are,

The Empalement of the Flower is divided into 5 equal Parts, which end in acute Points; the Flower is of the Butterfly Kind, having a large roundiſh plain Standard, 2 obtuſe Wings half the Length of the Standard, and a ſhorter Keel which is pointed. It hath 10 *Stamina*, 9 *joined, and one ſtanding ſeparate, terminated by ſingle Summits. It hath an oblong Germen, ſupporting a riſing Style, crowned by an obtuſe Stigma. The Germen becomes an oblong taper Pod.*

The *Species* are,

1. ERVUM *germinibus undato-plicatis. Hort. Up.* 224. *Ervum* whoſe Germens are waved and folded. This is the *Ervum verum. Camer. Hort.* True Bitter Vetch.

2. ERVUM *ſeminibus compreſſis convexis. Lin. Sp. Pl.* 738. *Ervum* with compreſſed Seeds which are convex. This is the *Lens vulgaris. C. B. P.* 346. Common Lentils.

3. ERVUM *pedunculis unifloris. Lin. Sp. Plant.* 738. *Ervum* with one Flower on each Foot Stalk. This is the *Lens monanthos. H. L.* 360. One flowered Lentil.

4. ERVUM *pedunculis ſubbifloris, ſeminibus globoſis quaternis. Flor. Suec.* 606. *Ervum* with two Flowers on each Foot Stalk, and four globular Seeds in each Pod. This is the *Vicia ſegetum ſingularibus ſiliquis glabris. C. B. P.* 345. Corn Vetch with ſingle ſmooth Pods.

5. ERVUM *pedunculis multifloris, ſeminibus globoſis binis. Lin. Sp. Plant.* 738. *Ervum* having many Flowers on a Foot Stalk, and two globular Seeds in each Pod. This is the *Vicia ſegetum, cum ſiliquis plurimis hirſutis. C. B. P.* 345. Corn Vetch having many hairy Pods.

The 1ſt Sort grows naturally in *Italy* and *Spain*: It is an annual, and riſes with angular weak Stalks a Foot and a Half high, garniſhed at each Joint with one winged Leaf, compoſed of 14 or 15 Pair of Lobes, very like thoſe of the Vetch, but narrower; the Flowers come out from the Side of the Stalks on Foot Stalks an Inch long, each ſuſtaining 2 pale coloured Flowers, ſucceeded by ſhort Pods a little compreſſed, each having 3 or 4 round Seeds; the Pods ſwell at the Place where each Seed is lodged, ſo are called jointed Pods. The Seed of this Plant ground to Flour, is ſometimes uſed in Medicine; and the green Herb for feeding Cattle in ſome Countries, but it is not worth cultivating for that Purpoſe in *England*.

The 2d Sort is the common Lentil, which is cultivated in many Parts of *England*, either as Fodder for Cattle, or for the Seeds, which are frequently uſed for meagre Soops. This is alſo an annual Plant, and is one of the leaſt of the Pulſe Kind, which is cultivated: This riſes with weak Stalks a Foot and a Half high, garniſhed with winged Leaves at each Joint, compoſed of ſeveral Pair of narrow Lobes, terminated by a Tendril or Claſper, which faſtens to any neighbouring Plant, and is thereby ſupported; the Flowers come out upon ſhort Foot Stalks from the Side of the Branches; they are ſmall, of a pale purple Colour, 3 or 4 ſtanding on a Foot Stalk; theſe are ſucceeded by ſhort flat Pods, containing 2 or 3 Seeds, which are flat, round, and a little convex in the Middle. The Flowers appear in *May*, and the Seeds ripen in *July*. The Seeds are ſown in *March*, where the Land is dry, but in moiſt Ground, the beſt Time is in *April*. The uſual Quantity allowed to an Acre of Land, is from one Buſhel and a Half to two Buſhels. If theſe are ſown in Drills as Peas, they will ſucceed better than when they are ſown in broad Caſt; The Drills ſhould be a Foot and a Half aſunder, to allow Room for the *Dutch* Hoe to clean the Ground between them; for if the Weeds are permitted to grow among them, they will get above the Lentils and ſtarve them. The Seeds of theſe will ripen in *July*, when the Plants ſhould be cut and dried, and afterward the Seeds threſhed out for Uſe.

The Seeds of Lentils are frequently the common Food of the poorer Sort of People in ſome of the Iſlands of the *Archipelago*, and other warm Countries.

There is another Sort of Lentil which has been cultivated of late Years in *England*, by the Title of *French* Lentil. This is the *Lens major* of *Caſpar Bauhin*, and is undoubtedly a different Species from the common, being twice the Size, both in Plant and Seed, and conſtantly produces the ſame from Seeds, though they do not differ much in their Characters, but this is much better worth cultivating than the other. This Pulſe is frequently called Tills in many Parts of *England*.

The 3d Sort is very like the common Lentil, but differs from it, in having but one Flower on each Foot Stalk, whereas the other has 3 or 4, but in other Reſpects is the ſame, ſo may be cultivated in the ſame Manner.

The 4th and 5th Sorts are ſmall annual Vetches, which grow naturally among the Wheat and Rye in *England*, ſo are not admitted into Gardens; they are only mentioned here as Weeds, which may be eaſily rooted out of the Fields, if they are cut up when they begin to flower, and not permitted to ripen their Seeds; for as they have annual Roots, ſo if they do not ſcatter their Seeds, they may be ſoon deſtroyed.

ERVUM ORIENTALE. *See* Sophora.

ERYNGIUM. *Lin. Gen. Plant.* 287. *Tourn. Inſt. R. H.* 327. *Tab.* 173. Sea Holly or Eryngo.

The *Characters* are,

It hath many ſmall Flowers ſitting upon one common co-

nical Receptacle, whoſe Involucrum is compoſed of ſeveral plain Leaves; the Flowers have a 5 leaved erect Empalement, coloured on the upper Part, ſitting upon the Germen; theſe form a roundiſh general Umbel, which is uniform. The Flowers have 5 oblong Petals, which are turned inward at Top and Bottom, and 5 erect hairy Stamina, ſtanding above the Flowers, terminated by oblong Summits; under the Empalement is ſituated a prickly Germen, ſupporting two ſlender Styles, crowned by ſingle Stigmas. The Germen becomes an oval Fruit divided in 2 Parts, each having one oblong taper Seed.

The *Species* are,

1. Eryngium *foliis radicalibus ſubrotundis plicatis ſpinoſis, capitulis pedunculatis. Hort. Cliff.* 87. Sea Holly whoſe lower Leaves are folded, roundiſh, and prickly, and Flower Heads having Foot Stalks. This is the *Eryngium maritinum. C. B.* 386. Sea Holly, or Eryngo.

2. Eryngium *foliis radicalibus pinnatis tripartitis. Hort. Cliff.* 87. Sea Holly, whoſe lower Leaves are winged and tripartite. This is the *Eryngium vulgare. C. B.* 386. Common Eryngo.

3. Eryngium *foliis radicalibus ovalibus planis crenatis, capitulis pedunculatis. Hort. Cliff.* 87. Sea Holly whoſe lower Leaves are plain, oval, and crenated, with Flower Heads having Foot Stalks. *Eryngium latifolium planum. C. B.* 386. Broad leaved plain Eryngo.

4. Eryngium *foliis radicalibus digitato-multifidis. Lin. Sp. Plant.* 233. Eryngo whoſe lower Leaves are fingered, and end in many Points. This is the *Eryngium montanum amethyſtinum. C. B.* 386. Purple Violet-coloured Mountain Eryngo.

5. Eryngium *foliis radicalibus rotundato-multifidis, capitulis pedunculatis.* Eryngo whoſe lower Leaves are roundiſh and multifid, and having Foot Stalks to the Heads of Flowers. This is the *Eryngium Alpinum amethyſtinum, capitulo majore palleſcente. Tourn. Alpine* Eryngo with a large pale coloured Head.

6. Eryngium *foliis radicalibus pinnatis, ſerrato-ſpinoſis, foliolis trifidis.* Eryngo whoſe lower Leaves are winged, ſpiny and indented, and the ſmaller ones trifid. This is the *Eryngium Orientale, foliis trifidis. T. Cor.* Oriental Eryngo with trifid Leaves.

7. Eryngium *foliis gladiolatis utrinque laxè ſerratis, denticulis ſubulatis. Lin. Hort. Cliff. American* Sea Holly with Leaves like the Aloe, lightly ſawed, commonly called Rattleſnake Weed in *America*.

8. Eryngium *foliis radicalibus oblongis inciſis, caule dichotomo, capitulis ſeſſilibus. Hort. Cliff.* 87. Eryngo with oblong lower Leaves which are cut, a Stalk divided by Pairs, and Heads ſitting cloſe. This is the *Eryngium planum minus. C. B. P.* Leſſer plain Eryngo.

9. Eryngium *foliis radicalibus cordatis oblongis, caulinis pinnatifidis, capitulo ſubcylindrico. Lin. Sp. Plant.* Eryngo with oblong Heart-ſhaped lower Leaves, thoſe upon the Stalks Wing-pointed, and cylindrical Heads. *Eryngium Alpinum cæruleum, capitulis dipſaci. C. B. P.* Blue *Alpine* Eryngo, with Heads like the Teaſel.

10. Eryngium *foliis gladiatis ſerrato-ſpinoſis, floralibus multifidis. Lin. Sp. Plant.* 232. Eryngo with Sword-ſhaped Leaves having ſpiny Saws, the upper Leaves ending in many Points. *Eryngium foliis anguſtis ſerratis fœtidum. Sloan. Cat.* 127. Stinking Eryngo having narrow ſawed Leaves, commonly called Feverweed.

The firſt of theſe Species grows in great Plenty on the ſandy and gravelly Shores in divers Parts of *England*, the Roots of which are candied, and ſent to *London* for medicinal Uſe, and is the true Eryngo. This hath creeping Roots, which run deep into the Ground; the Leaves are roundiſh, ſtiff, and of a grey Colour, ſet with ſharp Spines on the Edges. The Stalks riſe a Foot high, and divide upward into two or three; they are ſmooth, and garniſhed at each Joint with Leaves of the ſame Form as the lower, but ſmaller, and embrace the Stalks with their Baſe; at the End of the Branches, come out the Flowers in roundiſh prickly Heads; under each is ſituated a Range of narrow, ſtiff, prickly Leaves, ſpreading like the Rays of a Star; the Flowers are of a whitiſh blue Colour. They appear in *July*, and the Stalks decay in Autumn.

This Sort will grow in a Garden, if planted in a gravelly Soil, and produce their Flowers annually; but the Roots will not be near ſo large or fleſhy, as thoſe which grow on the Sea Shore, where they are flowed with Salt Water. The beſt Time to tranſplant the Roots, is in Autumn, when their Leaves decay; the young Roots are much better to remove than the old, becauſe they are furniſhed with Fibres, ſo will readily take Root: When theſe are fixed in the Ground, they ſhould remain unremoved; and if they are kept clean from Weeds, it is all the Culture they require.

The 2d Sort grows naturally in ſeveral Parts of *England*, and is a very troubleſome Weed; for the Roots run deep in the Ground, ſo are not eaſily deſtroyed by the Plough; and they ſpread and multiply greatly, to the Prejudice of whatever is ſown or planted on the Land, therefore it is not admitted into Gardens.

The 3d Sort makes a very pretty Appearance when in flower, eſpecially that with the blue Stalks and Flowers, for there is a Variety of this with white Flowers and Stalks; as this doth not ſpread at the Root, but keeps within Bounds, ſo a few of the Plants ſhould be allowed a Place in the Pleaſure Garden. This is propagated by Seeds, which, if ſown in Autumn, will more certainly ſucceed, than when ſown in Spring, for the latter commonly remains in the Ground a Year before they vegetate; and if the Seeds are ſown where the Plants are to remain, they will flower ſtronger than thoſe which are tranſplanted; for as they have long downright Roots, ſo theſe are commonly broken in removing, which greatly weakens the Plants. The Culture they require is to thin them where too near, keep them clean from Weeds, and dig the Ground about them every Spring before they ſhoot.

The Stalks will riſe from 2 to 3 Feet high, the lower Leaves are oval and plain; thoſe of the white Sort, are of a lighter green than thoſe of the blue; the upper Part of the Stalks of the white are of that Colour, thoſe of the blue are of the Colour of Amethyſt; the Stalks divide upward, where they are garniſhed with Leaves divided into many Points ending with Spines; the Flowers are produced in oval Heads at the Top of the Stalk, ſtanding on ſeparate Foot Stalks. The Flowers come out in *July*, and the Seeds ripen in *September*.

The 4th Sort grows naturally upon the Mountains of *Syria*, and alſo upon the *Apennines*. The lower Leaves are divided like the Fingers of a Hand, into 5 or 6 Segments,

ments, which are very much cut at their Extremities into many Parts which have ſmall Spines; the Stalk riſes about 2 Feet high, which is garniſhed with ſmaller and more divided Leaves; the upper Part of the Stalk, and alſo the Heads of Flowers, are of the fineſt Amethyſt Colour, ſo make a very fine Appearance. This Sort flowers in *July*, and when the Autumn proves dry, their Seeds will ripen in *September*, but in wet Seaſons the Seeds never ripen in *England*. This is propagated by Seeds, as the former Sort.

The 5th Sort has been ſuppoſed by many, to be only a Variety of the 4th; but I have propagated it by Seeds more than 20 Years, without finding the leaſt Alteration, ſo make no Doubt of its being a diſtinct Species. The lower Leaves of this are very much divided, and the Extremity of the Segments form an Oval or Circle; theſe are divided into many fine Parts, which end in Spines; they are of a whitiſh grey in the Middle, and green on the Borders. The Stalks riſe about 2 Feet high, garniſhed at the Joints with ſmaller Leaves which are finely cut; the Flowers terminate the Stalk, they are of a light blue Colour, and grow in larger Heads than either of the former Sorts. It flowers in *June* and *July*, and the Seeds ripen in Autumn. This grows naturally on the *Alps*; it is perennial, and may be propagated by Seeds as the former.

The 6th Sort was diſcovered by Dr. *Tournefort* in the *Levant*, from whence he ſent the Seeds to the Royal Garden at *Paris*. This hath a perennial Root, the lower Leaves are regularly divided into 7 or 9 Parts to the Mid-rib, as the other winged Leaves; theſe Segments are ſawed on their Edges, which end in ſharp Thorns. The Stalks riſe a Foot and a Half high, ſending out Side Branches; theſe are garniſhed with ſtiff Leaves, divided into narrower Segments than the lower, and terminated by 3 Points. The Flowers terminate the Stalks, ſitting cloſe among the Leaves, and are of a fine blue, as are alſo the Leaves on the upper Part of the Stalks, ſo they make a pretty Appearance. This flowers in *July*, but ſeldom ripens Seeds in *England*. It is propagated as the 3 former Sorts, and the Plants require the ſame Treatment.

The 7th Sort grows naturally in *Virginia* and *Carolina*, where it is titled Rattleſnake Weed, from its Virtues of curing the Bite of that venomous Reptile. This hath a perennial Root, from which ariſe ſeveral long Leaves, ſawed on their Edges; theſe Leaves are diſpoſed round the Root, after the ſame Form of the Aloe or Yucca; they are of a grey Colour, near a Foot long, and one Inch and a Half broad, ſtiff, and end in Spines. The Stalk is ſtrong, grows a Foot and a Half high, dividing upward into ſeveral Foot Stalks, each being terminated by an oval Head of Flowers, ſhaped like thoſe of the former Sorts; they are white, with a little Caſt of pale blue. This Sort flowers in *July*, but unleſs the Seaſon is very warm, the Seeds do not ripen here.

This Sort is propagated by Seeds, which, if ſown in Pots and plunged into a moderate hot Bed, the Plants will come up much ſooner than thoſe which are ſown in the full Ground, and will be much ſtronger before the Winter. When the Plants are fit to remove, they ſhould be each planted in a ſmall Pot, filled with light Earth; and if they are plunged into a moderate hot Bed, it will forward their taking Root; then they muſt be gradually inured to bear the open Air, into which they may be removed toward the latter End of *May*, and placed among other hardy exoticks. When the Plants have filled theſe Pots with their Roots, ſome of them may be ſhaken out, and planted in a warm Border; the others may be put into larger Pots, and in Autumn placed under a common Frame, where they may be expoſed to the free Air in mild Weather, but ſheltered from ſevere Froſt: The following Spring theſe may be turned out of the Pots, and planted in a warm Situation, where they will endure the Cold of our ordinary Winters very well; and if in ſevere Froſt they are covered with Straw, Peas Haulm, or any ſuch light Covering, it will ſecure them from Injury.

The 8th Sort grows naturally in *Spain* and *Italy*. This puts out oblong plain Leaves from the Root, which are cut on their Edges; the Stalks riſe about a Foot high, and branch out into many Diviſions, which are regular by Pairs, and at each of theſe Diviſions is ſituated a ſmall Head of Flowers, ſitting very cloſe between the Branches. Theſe have no great Beauty, ſo are ſeldom cultivated in Gardens, except for Variety.

The 9th Sort grows naturally on the Mountains of *Helvetia* and *Italy*. The Root is perennial, the lower Leaves are oblong, Heart-ſhaped, and plain; the Stalks riſe from 2 to 3 Feet high, branching out on the Side upward; theſe are garniſhed with ſtiff Leaves, deeply divided, ending in many Points with ſharp Spines; the Flowers terminate the Stalks, they are collected into conical Heads, and are of a light blue Colour, as are alſo the upper Part of the Stalks. This flowers in *July*, and the Seeds are ripe in *September*; it is propagated by Seeds as the other Sorts.

The 10th Sort grows naturally in the *Weſt-Indies*, where it is much uſed in Medicine, in the Cure of Fevers, from whence it hath the Appellation of Feverweed in thoſe Countries. The Roots are compoſed of many ſmall Fibres, which ſpread near the Surface; the lower Leaves are 6 or 7 Inches long; they are narrow at their Baſe, and enlarge upward to an Inch in Breadth near the Top, where they are rounded off on one Side like a Scymeter; they are finely ſawed on their Edges, and are of a light green Colour; the Stalk riſes about a Foot high, and ſpreads out into many Branches; they are garniſhed with ſmall Leaves, which end in many Points; the Flowers are produced in ſmall Heads which ſit cloſe to the Stalks, coming out at every Diviſion of the Stalks, and at the End of the Branches; theſe are of a dull white Colour, ſo make little Appearance. They appear in *June* and *July*, and the Seeds ripen in Autumn.

As this Plant is a Native of hot Countries, it will not thrive in *England*, but in a warm Stove. It is propagated by Seeds, which muſt be ſown on a hot Bed; and when the Plants are fit to remove, they ſhould be each planted in a ſmall Pot, plunged into the Bark Bed, and treated like other tender Plants from the ſame Country; the 2d Year they will produce Flowers and Seeds, ſoon after which they commonly decay.

ERYSIMUM. *Lin. Gen. Plant.* 729. *Tourn. Inſt.* Hedge Muſtard; in *French*, *Velar*, or *Tortelle*.

The *Characters* are,

The Empalement is compoſed of 4 oblong, oval, coloured *[illegible]; the Flower hath 4 Petals, placed in Form of a [illegible] theſe are oblong, plain, and obtuſe; it hath 2 nec[illegible] Glands, ſituated between the Stamina. It hath 6 Stamina, 4 of which are the Length of the Empalement, other 2 are a little ſhorter; they are terminated by ſingle Summits. It hath a very narrow 4 cornered Germen as long as the Stamina, with a ſhort Style crowned by a ſmall permanent Stigma; the Germen becomes a long narrow 4 cornered Pod with 2 Cells, filled with ſmall round Seeds.*

The *Species* are,

1. ERYSIMUM *ſiliquis ſpicæ adpreſſis. Hort. Cliff.* 337. Hedge Muſtard, whoſe Pods are preſſed cloſe to the Spikes. This is the *Eryſimum vulgare. C. B. P.* 100. Common Hedge Muſtard.

2. ERYSIMUM *foliis lyratis extimo ſubrotundo. Flor. Suec.* 557. Hedge Muſtard with Harp-ſhaped Leaves, the outer Segment being roundiſh. This is the *Siſymbrium erucæ folio glabro flore. Tourn. Inſt.* 226. Winter Creſs with a Rocket Leaf and yellow Flower.

3. ERYSIMUM *foliis radicalibus lyratis, caulinis pinnato-ſinuatis, floribus laxè ſpicatis.* Hedge Muſtard with lower Leaves ſhaped like a Harp, thoſe on the Stalks ſinuated and winged, and Flowers growing in looſe Spikes. This is the *Siſymbrium erucæ folio glabro minus & præcocius. Tourn. Inſt.* 226. Smaller early Winter Creſs with a ſmooth Rocket Leaf.

4. ERYSIMUM *foliis radicalibus ovatis integerrimis, petiolis decurrentibus, caulinis oblongis dentatis ſeſſilibus.* Hedge Muſtard with lower Leaves oval and entire, a winged Foot Stalk, and the Leaves upon the Stalks oblong, indented, and ſitting cloſe. This is the *Siſymbrium Orientale barbareæ facie, plantaginis folio. Tourn. Cor.* 16. Oriental *Siſymbrium* with the Appearance of Water Creſs, and Plantain Leaf.

5. ERYSIMUM *foliis inferioribus pinnato-ſinuatis, ſuperioribus oblongis dentatis, floribus ſolitariis alaribus.* Hedge Muſtard whoſe lower Leaves are winged and ſinuated, the upper oblong and indented, and ſingle Flowers proceeding from the Sides of the Stalks. This is the *Siſymbrium minus erucæ folio glabro nigro, craſſo lucido. Boerh. Ind. alt.* 2. 16. Smaller Winter Creſs, with a ſmooth, dark, thick, ſhining Rocket Leaf.

6. ERYSIMUM *foliis cordatis. Hort. Cliff.* 338. Hedge Muſtard with Heart-ſhaped Leaves. This is the *Heſperis allium redolens. Mor. Hiſt.* 2. 252. Dames Violet, ſmelling like Garlick, commonly called *Alliaria*, Sauce alone, or Jack by the Hedge.

7. ERYSIMUM *foliis integris lanceolatis. Flor. Lapp.* 263. Hedge Muſtard with entire Spear-ſhaped Leaves. This is the *Leucoium heſperidis folio. Tourn. Inſt.* 221. Gilliflower with a Dames Violet Leaf.

The 1ſt Sort is uſed in Medicine; this grows naturally on the Side of Foot Paths, and upon old Walls in moſt Parts of *England*, ſo is never cultivated in Gardens, where, if it was once admitted, it would ſoon become a troubleſome Weed.

The 2d and 3d Sorts alſo grow naturally on the Banks in moſt Parts of *England*; theſe were formerly eaten in Winter Sallads, before the *Engliſh* Gardens were furniſhed with better Plants; ſince when they have been rejected, for they have a rank Smell, and are diſagreeable to the Palate.

The 4th and 5th Sorts are not Natives of this Country, but ſince they have been introduced into ſome *Engliſh* Gardens, they have propagated by their ſcattered Seeds in ſo plentiful a Manner, as to become troubleſome Weeds. Theſe have a Reſemblance of the common Winter Creſs, but the lower Leaves of the 4th Sort are entire, and of an oblong Form; the upper Leaves are oblong and indented, in which this differs.

The 5th Sort hath thicker Leaves, which are of a dark lucid green Colour, and the Flowers come out ſingle from the Wings of the Stalk the whole Length. Theſe Differences are laſting, and do not alter.

The 6th Sort grows naturally on the Sides of Banks in many Parts of *England*, ſo is not ſuffered to have a Place in Gardens. This was formerly eaten as a Sallad Herb by the poorer Sort of People, who gave it the Title of Sauce alone. This hath a rank Smell and Taſte of Garlick, and is very biting and hot on the Palate; it is frequently preſcribed in Medicine.

The 7th Sort is ſometimes found growing naturally on old Walls in ſome Parts of *England*, particularly at *Cambridge* and *Ely*, at both which Places I have obſerved it. This hath pretty long hairy ſoft Leaves at the Root; the Stalks riſe near a Foot high, their upper Part being garniſhed with ſmall greeniſh white Flowers in looſe Spikes; theſe are ſucceeded by long compreſſed Pods, which hang downward. It flowers in *May*, and the Seeds ripen in *July* and *Auguſt*; the Roots will abide ſeveral Years in a dry lean Soil, or if they grow on a Wall, for in rich Land they ſoon decay.

The other Sorts are ſometimes kept in Botanick Gardens for Variety; they are biennial Plants, which periſh after they have perfected Seeds. Theſe may be propagated by ſowing their Seeds in Autumn, in the Places where they are to remain, and require no other Culture but to thin them, and keep them clear from Weeds.

ERYTHRINA. *Lin. Gen. Plant.* 762. *Corallodendron. Tourn. Inſt. R. H.* 661. *Tab.* 446. Coral Tree.

The *Characters* are,

The Flower hath a tubulous Empalement of one Leaf, which is entire and indented at the Brim. The Flower is of the Butterfly Kind, compoſed of 5 Petals; the Standard is Spear-ſhaped, and deflexed on the Styles; it is very long, and riſes upward; the 2 Wings are ſcarce longer than the Empalement, and are oval; the Keel is compoſed of 2 Petals which are no longer than the Wings, and are indented at the Top; it hath 10 *Stamina which are joined below, a little curved, about half as long as the Standard, and are unequal in their Length, terminated by Arrow-pointed Summits; it hath an Awl-ſhaped Germen with a Foot Stalk, narrowed at the Style, which is the Length of the Stamina, terminated by a ſingle Stigma. The Germen becomes a long ſwelling Pod ending in an acute Point, having one Cell, filled with Kidney-ſhaped Seeds.*

The *Species* are,

1. ERYTHRINA *foliis ternatis, caule ſimpliciſſimo inermi. Hort. Cliff. Erythrina* with trifoliate Leaves, and a ſingle ſmooth Stalk. This is the *Corallodendron humile, ſpicâ florum longiſſimâ, radice craſſiſſimâ. Cateſb.* Low Coral Tree with a very long Spike of Flowers and thick Root, commonly called the *Carolina* Coral Tree.

2. ERYTHRINA *inermis, foliis ternatis, caule arboreo.*

Smooth *Erythrina* with trifoliate Leaves, and a Tree like Stalk. This is the *Coral arbor Americana. Hort. Amſt.* 1. p. 211. Smooth *American* Coral Tree.

3. Erythrina *foliis ternatis, caule arboreo aculeato. Hort. Cliff.* 354. *Erythrina* with trifoliate Leaves, and a Tree-like prickly Stalk. *Corallodendron triphyllum Americanum, ſpinoſum, flore ruberrimo. Tourn.* Prickly three leaved *American* Coral Tree, with a very red Flower.

4. Erythrina *foliis ternatis haſtatis, caule fruticoſo aculeato. Erythrina* with trifoliate Leaves which are Spear-pointed, and a prickly ſhrubby Stalk. This is the *Corallodendron triphyllon Americanum, minus ſpinis & ſeminibus nigricantibus. Tourn. Inſt.* Smaller three leaved *American* Coral Tree, with blacker Spines and Seeds.

5. Erythrina *foliis ternatis acutis, caule arboreo aculeato, floribus ſpicatis longiſſimis. Erythrina* with trifoliate acute-pointed Leaves, a prickly Tree-like Stalk, and very long Spikes of Flowers. This is the *Corallodendron triphyllon Americanum, foliis mucronatis, ſeminibus coccineis, Houſt. Mſſ.* Three leaved *American* Coral Tree with acute pointed Leaves and ſcarlet Seeds.

6. Erythrina *foliis ternatis acutis, caule fruticoſo inermi, corollis longioribus clauſis. Erythrina* with acute trifoliate Leaves, a ſhrubby unarmed Stalk, and longer Flowers which are cloſed. *Coral arbor non ſpinoſa, flore longiore & magis clauſo. Sloan. Cat.* Coral Tree without Spines, and having a longer cloſer Flower.

The 1ſt Sort grows naturally in *South Carolina*, from whence Mr. *Cateſby* ſent the Seeds in the Year 1724, and many of the Plants were then raiſed in ſeveral curious Gardens. This hath a very large woody Root, which ſeldom riſes more than a Foot high, from which comes out freſh Shoots every Spring; theſe grow about two Feet high, their lower Part being garniſhed with trifoliate Leaves of a deep green Colour, and ſhaped like the Point of an Arrow; the upper Part of the Stalks are terminated by a long Spike of ſcarlet Flowers, compoſed of 5 Petals, the upper Petal being much longer than the other, ſo that at a ſmall Diſtance the Flowers appear to have but one Petal. After the Flowers are paſt, the Germen turns to a taper Pod, 5 or 6 Inches long, ſwelling in every Part where the Seeds are lodged, opening in one Cell, containing 5 or 6 Kidney-ſhaped ſcarlet Seeds. Theſe Plants flower in *England*, but they never produce Seeds here.

The 2d Sort hath a thick woody Stem, which riſes about 10 or 12 Feet high in this Country, but in its native Country grows to twice that Height ſending out many ſtrong irregular Branches, covered with a brown Bark, and garniſhed with trifoliate Leaves ſtanding on long Foot Stalks, the middle Lobe which terminates the Leaf, being much larger than the other two; they are all Heart-ſhaped, ſmooth, and of a deep green Colour; the Flowers come out at the End of the Branches, in ſhort thick cloſe Spikes; they are of a deep ſcarlet Colour, and make a fine Appearance. Theſe commonly are in Beauty in *May* and *June*, but are not ſucceeded by Pods here; in *America*, where the Trees grow naturally, they have thick ſwelling crooked Pods, which contain large Kidney-ſhaped Seeds, of a reddiſh purple Colour. The Leaves of this Tree decay in the Spring and fall off, ſo that in Summer they appear to have no Life, but in Autumn it puts out new Leaves, which continue green all the Winter. The Flowers do not appear till the Leaves drop, ſo that the Branches are often naked when the Flowers are out.

The 3d Sort chiefly differs from the 2d, in having its Trunk, Branches, and the Foot Stalks of the Leaves, armed with ſhort crooked Spines, the Leaves and Flowers being very like thoſe of the ſecond Sort.

The 4th Sort hath ſhrubby Stalks, which divide into Branches, and never riſe above 8 or 9 Feet high; theſe are armed in every Part with ſtrong crooked black Spines, the Leaves are ſmaller than thoſe of the two laſt Sorts, and have a nearer Reſemblance to thoſe of the firſt; the Foot Stalks of the Leaves are armed with the ſame Sort of Spines, and the Mid-rib of the Leaves have alſo ſome which are ſmaller and not ſo black; the Flowers are of a paler ſcarlet, and grow in looſer Spikes. The Seeds are as large as thoſe of the ſecond Sort, but are of a dark purple Colour.

The Seeds of the 5th Sort were firſt ſent me from *La Vera Cruz*, where the Plants grow naturally; and ſince I have received Seeds of the ſame Sort from the *Cape of Good Hope*, ſo that it is a Native of both Countries. The Seeds of this are not half ſo large as thoſe of the 2d or 3d Sorts, and are of a bright ſcarlet Colour; the Leaves are alſo much ſmaller, and have long acute Points; the Branches are very cloſely armed with crooked greeniſh Spines, as are alſo the Ribs and Foot Stalks of the Leaves. The Flowers grow in very long cloſe Spikes, and are of a beautiful ſcarlet Colour.

I have raiſed a Variety of this with paler Flowers and Seeds, and the Plants were leſs thorny; but I doubt of its being a diſtinct Species.

The 6th Sort grows in *Jamaica*, and ſome of the other Iſlands in *America*, from whence I received the Seeds. The Pods are longer, and not more than half ſo thick as thoſe of the 2d Sort; the Seeds are of a bright ſcarlet Colour, they are longer and ſlenderer than thoſe of the other Sorts; the Leaves are ſmall and acute pointed, and the Stalks ſmooth and without Spines; this doth not grow very large, but ſhoots out into Branches at a little Diſtance from the Ground, which grow erect, ſo form a buſhy Shrub. The Flowers come out at the End of the Branches in ſhort Spikes; the Standard of the Flower is long, and the Sides turn down over the Wings, which are alſo longer than thoſe of the other Species, and the whole Flower is more cloſed.

I have alſo received Specimens of a Variety of the 3d Sort from the Iſland of *Barbuda*, with very ſhort Flowers and Pods; they came by the Title of Bean Tree, which is the common Appellation given to theſe Trees in *America*; but the Flowers were ſeparated from the Stalks, ſo I can give no Account whether they grow in long or ſhort Spikes; but the Stamina of theſe are much longer than the Petals, in which it differs from all the other; the Pods are very ſhort, crooked, and rather thicker than thoſe of the 3d Sort; the Leaves have the ſame Appearance, and are armed with Spines, as are alſo the Stalks and Branches, but the Plants have not as yet produced Flowers here.

Two Years ago I received a few very ſmall Seeds of a Coral Tree from the *Cape of Good Hope*, which were a bright ſcarlet Colour; the Plants have no Spines, the Leaves are much larger than the other Sorts, their

Stems are ſtrong, and have the Appearance of growing to large Trees; but as they are young, ſo there is no determining how they may differ from the other Species.

There are two other Sorts of Coral Tree mentioned by Sir *Hans Sloane*, in his *Hiſtory of* Jamaica: One of which is by its Characters a *Sophora*, under which Genus we ſhall place it; and the other will be put under *Robinia*, to which Genus it properly belongs.

Theſe Plants when they produce their Flowers, are ſome of the greateſt Ornaments to the Stoves we yet know, for they are produced in large Spikes, of a beautiful ſcarlet, and make a fine Appearance; but they ſeldom flower here, or in any of the Northern Parts of *Europe*; yet in the Countries where they naturally grow, they produce Flowers in great Plenty every Year, ſo that it is very common there to ſee moſt of their Branches terminated by large Spikes of Flowers, when they have no Leaves on them; and the firſt Sort, which grows in *Carolina*, is equally productive of Flowers there, though here they do not flower oftener than once in 6 or 7 Years, and the other Sorts not ſo frequent. I have tried by various Methods to get them to flower, ſome I have treated hardily, by expoſing them to the open Air in Summer, and in the Winter kept them in a very moderate Temperature of Warmth; others I have kept plunged all the Year in the Tan Bed of the Stove, and ſome have remained in a dry Stove all the Year, where in warm Weather they had a large Share of Air admitted to them, and in Winter the Air was kept to the temperate Point. In this laſt Place the Plants have ſucceeded beſt, yet with this Treatment they ſeldom flower; and this is the general Complaint, not only in *England*, but alſo in *Holland* and *France*.

The 1ſt Sort may be kept through the Winter in a warm Green-houſe, but the Plants ſo kept rarely flower; and the two Sorts which I received from the *Cape of Good Hope*, have lived through the Winter in a warm Glaſs Caſe without Fire; but theſe have not made ſo good Progreſs, as thoſe kept in a temperate Warmth; ſo that in this Country, it is much the beſt Method of treating theſe Plants, eſpecially while they are young.

Theſe Plants are beſt propagated by Seeds, when they can be procured from the Countries where they naturally grow, for they do not produce any here. The Seeds ſhould be ſown in ſmall Pots and plunged into a moderate hot Bed, where, if the Seeds are good, the Plants will come up in a Month or five Weeks; when they are 2 Inches high, they ſhould be carefully ſhaken out of the Pots, and each planted in a ſmall Pot filled with light Earth, and plunged into a moderate hot Bed of Tanners Bark, where they muſt be ſhaded from the Sun till they have taken new Root; then a large Share of Air ſhould be admitted to them at all Times when the Weather is warm, to prevent their being drawn up weak; and as the Plants increaſe in Strength, they muſt have a larger Share of Air. They muſt be frequently refreſhed with Water, but not in great Plenty, for too much Moiſture will rot the Fibres of their Roots. In Autumn the Plants ſhould be removed into the Stove, and for the 2 or 3 firſt Winters while they are young, they will require more Warmth than when they have acquired more Strength. During the Time the Leaves continue in Vigour, the Plants will require to have Water 2 or 3 Times a Week; but when they are deſtitute of Leaves, it muſt be ſparingly given, for Moiſture then is very hurtful to them. As the Plants grow in Strength, they may be more hardily treated, and by managing them differently, there will be a greater Chance of their flowering. The 3d Sort is frequently planted in the Gardens near *Liſbon*, where they annually flower and ripen their Seeds, which have been brought me by Perſons who gathered the Pods from the Trees.

Theſe Plants may alſo be propagated by Cuttings, which, if planted in Pots during the Summer Months, and plunged into a hot Bed will take Root, but the ſeedling Plants are beſt.

ERYTHRONIUM. *Lin. Gen. Plant.* 375. *Dens canis. Tourn.* Dog's Tooth, or Dog's Tooth Violet.

The *Characters* are,

The Flower has no Empalement, it is Bell-ſhaped, and compoſed of 6 oblong Petals, which ſpread open to their Baſe. It hath 6 Stamina joined to the Style, terminated by oblong, erect, quadrangular Summits. In the Center is ſituated an oblong, obtuſe, 3 cornered Germen, ſupporting a ſingle Style which is longer than the Stamina, crowned by a triple, obtuſe, ſpreading Style. The Germen becomes an oblong obtuſe Capſule, with 3 Cells filled with flat Seeds.

The *Species* are,

1. ERYTHRONIUM *foliis ovatis. Eyrthronium* with oval Leaves. This is the *Dens canis latiore rotundioreque folio, flore ex purpurâ rubente. C. B. P.* 87. Dog's Tooth Violet with a broader and rounder Leaf, and a purple red Flower.

2. ERYTHRONIUM *foliis lanceolatis. Erythronium* with Spear-ſhaped Leaves. This is the *Dens canis anguſtiore longioreque folio, flore ex albo purpuraſcente. C. B. P.* 87. Dog's Tooth Violet, with a longer and narrower Leaf, and a purpliſh white Flower.

Theſe are the only diſtinct Species which I have ſeen, but there are ſeveral Varieties of them, preſerved in curious Gardens. Of the 1ſt Sort there is a white Flower, which is pretty common in the Gardens; another with a pale purple, and a 3d with yellow Flowers, which are rare in *England*: And of the 2d Sort there is one with a white, and another with a ſoft red Flower, both which are now very rare in the Gardens.

The 1ſt Sort ſends out 2 oval Leaves, joined at their Baſe; they are 3 Inches long, and one and a Half broad in the Middle, gradually leſſening toward the End; theſe at firſt embrace each other incloſing the Flower, but afterward they ſpread flat upon the Ground; they are ſpotted with purple and white Spots all over their Surface; between theſe riſes a ſingle naked Stalk about 4 Inches high, ſmooth and of a purple Colour; this ſuſtains one Flower, compoſed of 6 Spear-ſhaped Petals, which in this are purple, but in ſome they are white; the Flower hangs downward, and the Petals reflex and ſpread open to their Baſe. In the Center is ſituated the oblong 3 cornered Germen ſupporting a ſingle Style which is longer than the Stamina, and crowned by a triple Stigma; the purple Stamina ſtand cloſe about the Style, and the Stigma ſtands farther out. This flowers early in *April*, but does not produce Seeds in *England*.

The Root is white, oblong, fleſhy, and ſhaped like a Tooth, from whence it had the Title of Dog's Tooth.

The 2d Sort differs from the firſt in the Shape of its Leaves, which are longer and narrower, and the Flowers are a little larger but not ſo well coloured. They grow naturally in *Hungary*, and ſome Parts of *Italy*.

They are propagated by Offsets from their Roots, which they do not ſend out very plentifully, ſo are not ſo commonly ſeen in Gardens, as moſt other Flowers of the ſame Seaſon: They love a ſhady Situation and a gentle loamy Soil, but ſhould not be too often removed. They may be tranſplanted any Time after the Beginning of *June*, when their Leaves will be quite decayed, till the Middle of *September*; but the Roots ſhould not be kept very long out of the Ground, for if they ſhrink, it will often cauſe them to rot. The Roots of theſe Flowers ſhould not be planted ſcattering in the Borders of the Flower Garden, but in Patches near each other, where they make a good Appearance.

ESCHYNOMENE. *See* Æſchynomena.

ESCHYNOMENOUS, ÆSCHYNOMENOUS PLANTS [Αἰσχυνόμενοι, of αἰσχύνομαι *Gr.* to be aſhamed,] the ſenſitive Plants; which, when touched, ſhrink in, or let their Leaves fall down.

ESCULENT PLANTS [of *Eſculentus*, *Lat.* eatable,] ſuch Plants, or Roots of them, as may be eaten; as Beets, Carrots, *Jeruſalem* Artichokes, Leeks, Onions, Parſneps, Potatoes, Radiſhes, *&c.*

ESPALIERS, are either Rows of Trees planted about a whole Garden or Plantation, or in Hedges, ſo as to incloſe Quarters or ſeparate Parts of a Garden; which are trained up flat in a cloſe Hedge, for the Defence of tender Plants againſt the Violence and Injury of Wind and Weather. See *Hedges*.

The moſt commonly received Notion of Eſpaliers are Hedges of Fruit Trees, which are trained up regularly to a Lattice of Wood Work, formed of Aſh Poles, or ſquare long Timbers cut out of Fir, *&c.* and it is of this Sort of Eſpalier that I ſhall treat in this Place.

Eſpaliers of Fruit Trees are commonly planted to ſurround the Quarters of a Kitchen Garden, for which Purpoſe they are of admirable Uſe and Beauty; for by laying out the Walks of this Garden regularly, which are bounded on each Side by theſe Hedges, when they are handſomely managed, they have a wonderful Effect in ſheltering the Kitchen Plants in the Quarters, and alſo ſcreening them from the Sight of Perſons in the Walks; ſo that a Kitchen Garden well laid out in this Manner, and properly managed, will be equal to the fineſt regular Parterre for Beauty.

The Trees chiefly planted for Eſpaliers are Apples, Pears, and ſome Plums, but the two former are moſtly uſed: Some plant Eſpaliers of Apples grafted upon Paradiſe Stocks, but theſe being of humble Growth and a ſhort Duration, are not ſo proper for this Purpoſe, unleſs for very ſmall Gardens; therefore I ſhould rather adviſe the having them upon Crab Stocks, or (if in ſmaller Gardens, where the Trees cannot be allowed to grow ſo high) upon what the Gardeners call the *Dutch* Stock; which will cauſe them to bear ſooner, and prevent their growing too luxuriant, and theſe will continue many Years in Vigour.

In chooſing the Trees for an Eſpalier, endeavour as near as poſſible, to plant the ſeveral Sorts which are nearly of the ſame Growth in one Line, that the Eſpalier may be the more regular, and of an equal Height, which greatly adds to their Beauty; for if you plant Trees which ſhoot very unequally in the ſame Line, it will be impoſſible to make the Eſpalier regular: Beſides, the Diſtance of the Trees muſt be in Proportion to their Growth; for thoſe of a large Growth, ſhould be planted 30 or 35 Feet aſunder; whereas thoſe of ſmaller Growth, need not be above 25 Feet Diſtance from each other.

The Width of the Walks and Borders between theſe Eſpaliers ſhould (in a large Garden) be 14 or 16 Feet at leaſt; and if the Trees are deſigned to be carried up pretty high, the Diſtance ſhould be greater, that each Side may receive the Advantage of the Sun and Air, which is abſolutely neceſſary, if you would have the Fruit well taſted. If your Ground is ſo ſituated, that you are at full Liberty which Way to make the Eſpaliers, I would adviſe the placing the Lines from the Eaſt a little inclining to the South, and toward the Weſt a little inclining to the North, that the Sun may ſhine between the Rows in the Morning and Evening when it is low; for in the Middle of the Day, when the Sun is advanced far above the Horizon, it will ſhine over the Tops of the Eſpaliers, and reach the Surface of the Earth about their Roots, which is a Matter of more Conſequence than many People are aware of.

The Sorts of Apples proper for Eſpaliers, are the *Golden Pippin*, *Nonpareil*, *Rennette Griſe*, *Aromatick Pippin*, *Holland Pippin*, *French Pippin*, *Wheeler*'s *Ruſſet*, *Pile*'s *Ruſſet*, with ſome others. The Seaſon for planting, and Method of pruning and trailing theſe Trees, you will ſee under the Articles of *Apples* and *Pruning*.

The Sorts of Pears proper for an Eſpalier, are chiefly the Summer and Autumn Fruits, for ſome of the Winter Pears ſeldom ſucceed well in an Eſpalier. Theſe Trees, if deſigned for a ſtrong moiſt Soil, ſhould be upon Quince Stocks; but if for a dry Soil, upon Free Stocks. Their Diſtance of planting muſt alſo be regulated by the Growth of the Trees, which are more unequal in Pears than Apples, and ſhould therefore be more carefully examined before they are planted. Pears upon Free Stocks, ſhould never be leſs than 30 Feet aſunder for moderate growing Trees; but for vigorous Shooters, the Space of 40 Feet is little enough, eſpecially if the Soil be ſtrong, in which Caſe they ſhould be planted at a greater Diſtance. The Sorts of Pears I would recommend for an Eſpalier, are the *Jargonelle*, *Blanquette*, *Poire ſans Peau*, Summer *Boncretien*, *Hamden*'s *Bergamot*, *Poire du Prince*, Autumn *Bergamot*, *L'ambrette*, *Gros Rouſſelet*, *Chaumontelle*, *Beurre du Roy*, *Le Marquis*, *Creſſane*, with many others of leſs Note; always remembering, that thoſe Pears which are of the melting Kind, will do better in Eſpalier than the breaking Pears, which ſeldom ripen well on Eſpalier; as alſo that many Sorts of Pears will ripen well on an Eſpalier in a warm Soil and Situation, which require a Wall in other Places; you ſhould alſo be careful of the Stocks theſe are grafted on, for if the breaking Pears are grafted upon Quince Stocks, the Fruit will be ſtony, but the melting Pears will be improved by them. For the Method of planting, ſee the Article *Pear*; and for pruning and managing, ſee *Pruning*.

I ſhall now give Directions for making the Eſpalier, to which the Trees are to be trained; but this ſhould not be done until the 3d Year after the Trees are planted, for while they are young, it will be ſufficient to drive a few ſhort Stakes into the Ground on each Side of the Trees, to which the Branches ſhould be faſtened in a horizontal Poſition, as they are produced, in order to train them properly for the Eſpalier; which Stakes may be placed nearer, or at a farther Diſtance, according as the Shoots produced may require, and theſe will be ſufficient for the 3 firſt Years; for ſhould you frame the Eſpalier the 1ſt Year the Trees are planted, the Stakes would rot before the Eſpalier is covered. The cheapeſt Method to make theſe Eſpaliers is with Aſh Poles, of which you ſhould have two Sorts; one of the largeſt Size, which contains 13 Poles in a Bundle, and the other Size thoſe of half a Hundred. The firſt or largeſt Size Poles, ſhould be cut about 7 Feet and a Half long; theſe are intended for upright Stakes, and muſt be ſharpened at the largeſt End, that they may, with more Eaſe, be driven into the Ground; theſe ſhould be placed at a Foot Diſtance from each other in a direct Line, and of an equal Height, about 6 Feet above Ground; then you ſhould nail a Row of ſtrait ſlender Poles along upon the Tops of the upright Stakes, which will keep them exactly even, and continue to croſs the Stakes with the ſmaller Poles, and alſo with the Tops which were cut off from the the larger Stakes, at about nine Inches Diſtance, Row from Row, from the Top to the Bottom of the Stakes. Theſe Rows of Poles ſhould be faſtened with Wire to the Stakes, which if painted or oiled will laſt a long Time, and the largeſt End of the Poles ſhould be cut flat and nailed to the upright Stakes, which will ſecure the Eſpalier almoſt as long as the Poles will endure; whereas if your Faſtening is not ſtrong, the Poles will be continually diſplaced with every ſtrong Wind.

When your Eſpalier is thus framed, you muſt faſten the Branches of the Trees thereto, either with ſmall Oſier Twigs, Rope Yarn, or ſome ſuch binding, obſerving to train them in a horizontal Poſition, and at equal Diſtances; being careful not to croſs any of the Branches, nor to lay them in too thick. The Diſtance which ſhould be allowed for the Branches of Pears and Apples, muſt be proportioned to the Size of the Fruit; ſuch of them whoſe Fruit is large, as the Summer *Boncretien*, Monſieur *John*, and *Beurre du Roy* Pears, and the *Rennet Griſe*, *Holland* Pippin, *French* Pippin, and other large Apples, ſhould have their Branches 6 or 8 Inches Diſtance at leaſt; and to thoſe of leſſer Growth, 4 or 5 Inches will be ſufficient. For farther Directions, I refer to the Articles of the ſeveral Fruits; as alſo that of *Pruning*, where theſe Particulars are ſufficiently explained.

But beſides this Sort of Eſpalier made with Aſh Poles, there is another Sort that is by many People preferred; which is framed with ſquare Timbers cut to any Size, according to the Strength thereof, or the Expence the Owner is willing to go to. Theſe, though they appear more ſightly, when well fixed and painted, are not of longer Duration than one of the former, provided it is well made, and the Poles are ſtrong which are ſet upright; nor will they anſwer the Purpoſe better, though they are vaſtly more expenſive, for the greateſt Beauty conſiſts in diſpoſing of the Branches, which, eſpecially in Summer, when the Leaves are on, will entirely hide from Sight the Frame of the Eſpalier; therefore all Expence in erecting theſe is needleſs, farther than making Proviſion to ſecure the Branches in a regular Order.

Fruit Trees thus planted, and well managed, are much preferable to thoſe trained up in any other Figure, on ſeveral Accounts; firſt, theſe take up very little Room in a Garden, ſo do not hurt the Plants which grow in the Quarters; 2dly, the Fruit upon theſe are better taſted than thoſe which grow on Dwarfs, the Sun and Air having freer Acceſs to every Part of the Tree, whereby the Dampneſs ariſing from the Ground is ſooner diſſipated, which is of ſingular Advantage to Fruit Trees; and as the Trees againſt an Eſpalier are kept low, and the Branches being faſtened to the Eſpalier, the Fruit will not be blown ſo ſoon by the Wind, ſo that upon the whole, Eſpaliers muſt be allowed to be of great Uſe and Beauty.

EVER-GREEN THORN. *See* Pyracantha.

EVERLASTING PEA. *See* Lathyrus.

EUONYMUS. *Lin. Gen. Plant.* 240. *Tourn. Inſt. R. H.* 617. *Tab.* 388. The Spindle Tree, or Prickwood; in *French*, *Fuſain*.

The *Characters* are,

It hath a ſhort Empalement to the Flower, of one Leaf, divided into 4 *or* 5 *Parts. The Flower hath* 4 *or* 5 *oval Petals, which ſpread open. It hath* 4 *or* 5 *ſhort Stamina, joined at their Baſe to the Germen, and terminated by twin Summits. In the Center is ſituated a large oval Germen, ſupporting a ſhort Style, crowned by an obtuſe Stigma. The Germen becomes a ſucculent four or five-cornered coloured Capſule, having ſo many Cells as Angles, each containing one oval Seed.*

The *Species* are,

1. EUONYMUS *foliis lanceolatis, floribus tetrandriis, fructu tetragono.* Spindle Tree with Spear-ſhaped Leaves, Flowers having four Stamina, and quadrangular Fruit. This is the *Euonymus vulgaris, granis rubentibus. C. B.* The common Spindle Tree.

2. EUONYMUS *foliis ovato-lanceolatis, floribus pentandriis, fructu pentagono, pedunculis longiſſimis.* Spindle Tree with oval Spear-ſhaped Leaves, Flowers having five Stamina, a five-cornered Fruit, and very long Foot Stalks. This is the *Euonymus latifolius. C. B.* Broad-leaved Spindle Tree.

3. EUONYMUS *floribus omnibus quinquefidis. Lin. Sp. Plant.* 197. Spindle Tree whoſe Flowers are all divided into five Points. This is the *Euonymus Virginianus, pyracanthæ foliis, ſempervirens, capſulâ verrucarum inſtar aſperatâ rubente. Pluk. Phyt.* 115. *f.* 5. *Virginian* Evergreen Spindle Tree with rough warted red Seed Veſſels.

4. EUONYMUS *foliis pinnatis, fructu racemoſo trigono.* Spindle Tree with winged Leaves, and three cornered Fruit growing in Bunches. This is the *Euonymus caudice non ramoſo, folio alato, fructu rotundo tripyreno. Sloan. Cat. Jam.* 171. Spindle Tree with an unbranching Stalk, a winged Leaf, and a round Fruit, having 3 Seeds.

The 1ſt Sort grows naturally in *England*. It is very common in Hedges, and is ſometimes found growing in Woods. This, when growing in Hedges, is ſeldom ſeen of any conſiderable Size, but rather appears like a Shrub; but if planted ſingle, and trained up like other Trees, will have a ſtrong woody Stem, and riſe more than 20 Feet high, dividing into many Branches, garniſhed with Spear-ſhaped Leaves, about 3 Inches long, and one Inch and a Quarter broad in the Middle, gradually diminiſhing to both Ends; they are entire, of a deep green Colour, and are placed oppoſite. The Flowers come out in ſmall Bunches from the Side of the Stalks, ſtanding on ſlender Foot Stalks; they are compoſed of 4 whitiſh Petals, which are expanded in Form of a Croſs. The Empalement is divided into 4 Parts. The Flowers have 4 Stamina, and the Fruit is four-cornered, and opens into 4 Cells. This Tree flowers the latter Part of *May* and the Beginning of *June*, and the Fruit ripens in *October*, at which Time the Seed Veſſels ſpread open, and expoſe the Seeds, which are of a beautiful red Colour, ſo that when the Branches are well ſtored with them the Trees make a good Appearance at that Seaſon, when growing among other Sorts. The Wood of this Tree is uſed by the muſical Inſtrument Makers for toothing of Organs and Virginal Keys; the Branches are cut into Tooth-pickers, and for making of Skewers, and Spindles are made of the Wood, from whence the Tree was titled Spindle Tree; but in ſome Countries it is called Dogwood.

The 2d Sort grows naturally in *Auſtria* and *Hungary*; this was very ſeldom ſeen in *England* till of late Years, ſince I procured it from *France*, and from the Seeds of thoſe Plants great Numbers have been ſince raiſed, ſo it is now common in ſeveral of the Nurſeries near *London*; this riſes with a ſtronger Stem than the firſt, and grows to a larger Size. The Leaves are oval and Spear-ſhaped, about 4 Inches long, and 2 broad in the Middle, of a light green Colour, and entire; they are placed oppoſite on the Branches, with ſhort Foot Stalks. The Flowers come out from the Side of the Branches, on very ſlender Foot Stalks, which are 2 Inches and a Half long; theſe branch out into a looſe Bunch, ſo that the Flowers ſtand upon ſeparate Foot Stalks. The Flowers have 5 Petals, which at firſt are white, but afterward change to a purple Colour; the Empalement of the Flower is divided into 5 Parts. It hath 5 Stamina, and the Fruit is five cornered, and the Fruit is much larger than that of the common Sort, and the Foot Stalks being weak, the Fruit always hang down.

The 3d Sort grows naturally in *Virginia*, *Carolina*, and other Parts of *North America*; this riſes with a ſhrubby Stalk 8 or 10 Feet high, dividing into many Branches, which come out oppoſite at every Joint; theſe are garniſhed with Spear-ſhaped Leaves, which are 2 Inches long, and about 3 Quarters broad in the Middle, ending in acute Points; they are placed oppoſite, and continue all the Year. The Flowers are produced at the End of the Branches, and alſo from the Sides, in ſmall Cluſters, which are ſucceeded by round Capſules, cloſely armed with rough Protuberances. This flowers in *July*, but ſeldom produces Fruit in *England*.

As this is an evergreen Shrubb, it merits a Place in every curious Garden, and particularly in all Plantations of ever-green Trees and Shrubs; there is a Variety of this with variegated Leaves, which is preſerved in the Nurſery Gardens.

The 4th Sort grows naturally in *Jamaica*, and other Iſlands in the *Weſt-Indies*; this riſes with an upright woody Stalk, 10 or 12 Feet high; at the Top it divide, into 2 or 3 ſhort Branches, garniſhed by winged Leaves compoſed of ſix or ſeven Pair of ſmall Leaves (or Lobes) about two Inches long, and one Inch broad; theſe Leaves come out without Order, ſtanding on long Foot Stalks. The Flowers come out in Cluſters from the Side of the Branches, toward their End; theſe are ſucceeded by roundiſh Capſules, having a thick brown Cover, which open in three Cells, each containing a ſingle hard Seed.

The two firſt Sorts may be propagated by Seeds, or Layers, if by Seeds, they ſhould be ſown in Autumn, ſoon after they are ripe; then the Plants will come up the Spring following, but if the Seeds are not ſown till Spring, the Plants will not appear till the following Spring, whereby a whole Year is loſt. They ſhould be ſown on a ſhady Border where they will ſucceed better than when more expoſed to the Sun. When the Plants come up, they require no other Care but to keep them clean from Weeds till the following Autumn, when, as ſoon as their Leaves decay, they ſhould be taken up and tranſplanted into a Nurſery, in Rows 2 Feet diſtant, and one Foot aſunder in the Rows; in this Place they may remain 2 Years, and then may be removed to the Places where they are to remain.

When theſe are propagated by Layers, the young Shoots ſhould be laid down in Autumn, and if the Joint which is laid deepeſt into the Ground is ſlit, as practiſed for Carnations, it will cauſe them to put out Roots much ſooner than they otherwiſe would do; theſe Layers will be ſufficiently rooted in one Year to bear tranſplanting, when they ſhould be taken from the old Plants and treated as the Seedlings. The Cuttings of theſe Sorts, planted in a ſhady Border, will take Root, but they ſhould be planted in Autumn, as ſoon as their Leaves begin to fall; they ſhould be the Shoots of the ſame Year, with a Knot of the former Year at Bottom.

EUPATORIOPHALACRON. *See* Verbeſina.

EUPATORIUM. *Lin. Gen. Plant.* 842. *Tourn. Inſt.* Hemp Agrimony; in *French*, *Eupatoire*.

The *Characters* are,

It hath a compound Flower, compoſed of ſeveral hermaphrodite Florets, Funnel-ſhaped, and cut into 5 *Parts at the Brim, which ſpread open; theſe are included in one ſcaly Empalement, whoſe Scales are narrow, erect, and unequal. The Florets have each* 5 *ſhort hairy Stamina, terminated by cylindrical Summits. In the Bottom is ſituated a ſmall Germina, ſupporting a long ſlender Style, which is bifid, and crowned by a narrow Stigma. The Germina becomes an oblong Seed, crowned with Down, ſitting in the Empalement.*

The *Species* are,

1. EUPATORIUM *foliis digitatis. Hort. Cliff.* 396. *Eupatorium* with fingered Leaves. This is the *Eupatorium cannabinum. C. B.* 320. Common Hemp Agrimony.

2. EUPATORIUM *foliis lanceolato-ovatis, ſerratis, petiolatis, caule erecto. H. C. Eupatorium* with Spear-ſhaped oval Leaves, ſawed, with Foot Stalks, and an upright Stalk. This is the *Eupatorium Novæ Angliæ, urticæ*

foliis, floribus purpuraſcentibus, maculato caule. H. L. *New-England* Hemp Agrimony with Nettle Leaves, purpliſh Flowers, and ſpotted Stalks.

3. EUPATORIUM *foliis ſubverticillatis, lanceolatis ſerratis petiolatis rugoſis. Lin. Sp. Pl.* 838. *Eupatorium* with Leaves placed in Whorls, Spear-ſhaped, ſawed, rough, and have Foot Stalks. This is the *Eupatorium folio oblongo rugoſo, caule purpuraſcente. Tourn.* *Canada* Hemp Agrimony with a long rough Leaf, and purpliſh Stalk.

4. EUPATORIUM *caule volubili, foliis cordatis dentatis acutis. Hort Cliff.* 396. *Eupatorium* with a twining Stalk and Heart-ſhaped Leaves, which are ſharply indented. This is the *Eupatorium Americanum ſcandens, haſtato magis acuminato folio. Vaill. Mem.* 1719. Climbing *American* Hemp Agrimony, with a Spear-like ſharp-pointed Leaf.

5. EUPATORIUM *foliis ſeſſilibus diſtinctis ſubrotundo-cordatis. Lin. Sp. Plant.* 837. *Eupatorium* with roundiſh Heart-ſhaped Leaves ſitting cloſe to the Stalks and are diſtinct. This is the *Eupatorium Americanum, foliis rotundioribus abſque pediculis. Vaill. Mem.* 1719. *American* Hemp Agrimony with round Leaves, having no Foot Stalks.

6. EUPATORIUM *foliis oblongo-cordatis, floribus paniculatis, caule fruticoſo ſcandente. Eupatorium* with oblong Heart-ſhaped Leaves, paniculated Flowers, and a climbing ſhrubby Stalk. This is the *Eupatorium ſcandens foliis ſubrotundis lucidis, floribus ſpicatis albis. Houſt.* Climbing Hemp Agrimony with roundiſh ſhining Leaves, and white Flowers growing in Spikes.

7. EUPATORIUM *foliis ovatis, obtuſè ſerratis petiolatis trinerviis, calycibus ſimplicibus. Lin. Sp. Plant.* 839. *Eupatorium* with oval, obtuſe, ſawed, three veined Leaves, having Foot Stalks, and ſingle Empalements to the Flowers. *Eupatorium Americanum, teucrii folio, flore niveo. Vaill. Mem. Acad. Scien. American* Hemp Agrimony, with a Tree Germander Leaf, and a white Flower.

8. EUPATORIUM *foliis connatis tomentoſis. Hort. Cliff.* 396. *Eupatorium* with woolly Leaves joined at their Baſe. This is the *Eupatorium Virginianum, ſalviæ foliis longiſſimis acuminatis, perfoliatum. Pluk. Alm. Virginian* perfoliate Hemp Agrimony with long Sage-like Leaves, cloſely ſurrounding the Stalk.

9. EUPATORIUM *foliis oblongis, obtuſis, crenatis, glabris, calycibus ſimplicibus. Eupatorium* with oblong, obtuſe, ſmooth, crenated Leaves, and ſingle Empalements to the Flowers. This is the *Eupatorium betonicæ folio glabro & carnoſo, flore cæruleo. Houſt.* Hemp Agrimony with a fleſhy ſmooth Betony Leaf, and a blue Flower.

10. EUPATORIUM *foliis cordatis ſerratis caule erecto arboreo. Eupatorium* with Heart-ſhaped ſawed Leaves, and an upright Tree-like Stalk. This is the *Eupatorium Americanum arboreſcens, mori folio, floribus albicantibus.* Tree-like *American* Hemp Agrimony with a Mulberry Leaf, and white Flowers.

11. EUPATORIUM *foliis ovatis petiolatis integris, caule fruticoſo ramoſo, calycibus ſimplicibus. Eupatorium* with oval entire Leaves, having Foot Stalks, a branching ſhrubby Stalk, and ſingle Empalements to the Flowers. This is the *Eupatorium Americanum fruteſcens, balſaminæ luteæ foliis, nigris maculis punctatis. Houſt. American* ſhrubby Hemp Agrimony with yellow Balſamine Leaves, ſpotted with black.

12. EUPATORIUM *foliis lanceolato-linearibus trinerviis integerrimis. Lin. Sp. Plant.* 836. *Eupatorium* with narrow, Spear-ſhaped, entire Leaves, having three Nerves. This is the *Eupatorium Virginianum, folio anguſto, floribus albis. Hort. Elth.* 141. *Tab.* 115. *f.* 140. *Virginia* Hemp Agrimony with a narrow Leaf, and white Flowers.

13. EUPATORIUM *foliis lanceolato-linearibus acutis, ſupernè ſerratis, caule ramoſo.* Hemp Agrimony with narrow, Spear-ſhaped, pointed Leaves, ſawed on their upper Part, and a branching Stalk.

14. EUPATORIUM *foliis cordatis acutis, dentatis, trinerviis caule fruticoſo ramoſo. Eupatorium* with pointed, Heart-ſhaped, ſawed Leaves, having three Veins, and a branching ſhrubby Stalk. This is the *Conyza fruticoſa, folio haſtato, flore pallidè purpureo. Sloan. Cat. Jam.* 124. Shrubby Fleabane with a Spear-ſhapped Leaf, and a pale purple Flower.

15. EUPATORIUM *foliis cordatis rugoſis crenatis, caule paniculato. Eupatorium* with rough, Heart-ſhaped, crenated Leaves, and a paniculated Stalk. This is the *Conyza Salviæ foliis conjugatis, floribus ſpicatis rubentibus. Houſt. Mſſ.* Fleabane with Sage Leaves placed oppoſite, and red Flowers growing in Spikes.

16. EUPATORIUM *foliis cordatis acuminatis, caule volubili, floribus ſpicatis racemoſis. Eupatorium* with Heart-ſhaped pointed Leaves, a twining Stalk, and branching ſpiked Flowers. This is the *Eupatorium Americanum, ſcandens, folio haſtato glabro, floribus ſpicatis. Houſt. Mſſ.* Climbing *American* Hemp Agrimony with a ſmooth Spear-ſhaped Leaf, and ſpiked Flowers.

17. EUPATORIUM *foliis ſubverticillatis, lanceolato-ovatis ſerratis petiolatis rugoſis. Lin. Sp. Plant.* 838. Hemp Agrimony with oval, Spear-ſhaped, rough, ſawed Leaves, having Foot Stalks, and ſtanding in Whorls on the lower Part of the Stalk.

18. EUPATORIUM *foliis verticillatis, lanceolatis, acutis, ſerratis, infernè rugoſis. Eupatorium* with pointed Spear-ſhaped Leaves, ſawed on their Edges, rough on their under Side, and ſtand in Whorls round the Stalks. This is the *Eupatorium folio oblongo, rugoſo, ampliori, caule vireſcente. Tourn. Inſt.* Hemp Agrimony with a large, oblong rough Leaf, and a green Stalk.

19. EUPATORIUM *foliis cordato-ovatis, obtuſè ſerratis petiolatis, calycibus multifloris. Lin. Sp. Plant.* 838. *Eupatorium* with Heart-ſhaped oval Leaves, obtuſely ſawed, having Foot Stalks, and many Flowers to the Empalements. This is the *Eupatorium ſcorodoniæ folio, flore cæruleo. Hort. Elth.* 140. *Tab.* 114. Hemp Agrimony with a Wood Sage Leaf, and a blue Flower.

This grows naturally in *Carolina*, from whence the late Dr. *Dale* ſent me the Seeds; theſe Plants flowered very finely the Year after they were raiſed, but never have flowered ſince, for the Roots creep greatly in the Ground, but never ſend up any Stalks.

The 1ſt Sort grows naturally by the Side of Rivers and Ditches in *England*, and is the only Species of this Genus, which is known to grow naturally in *Europe*; This is eſteemed a very good vulnerary Herb, ſo ſtands in the Liſt of medicinal Plants. It is ſeldom admitted into Gardens, becauſe where it is ſuffered to ſeed, the Plants will riſe to a great Diſtance.

The 2d Sort grows naturally in ſeveral Parts of *North-America*, from whence it has been introduced to the Gardens in *Europe*; this hath a perennial Root, but an annual Stalk, which riſes about two Feet and a Half high, it is purple, and has many dark Spots upon it. The Leaves are rough, and oval Spear-ſhaped, having Foot Stalks; they are placed by Threes round the Stalk toward the Bottom, but upward by Pairs oppoſite at each Joint. The Stalks are terminated by Cluſters of purple Flowers, growing in a Sort of Corymbus; theſe come out in *July* and *Auguſt*, and, in warm Seaſons, will ripen its Seeds in Autumn.

The 3d Sort grows naturally in *North America*; this riſes with an upright Stalk, near 4 Feet high, garniſhed with long, narrow, Spear-ſhaped Leaves at each Joint; theſe are deeply ſawed on their Edges, and the Mid-rib is oblique to the Foot Stalk; they are placed by Fours round the Stalk in Whorls, and are of a dark green Colour. The Stalks are terminated by Bunches of purple Flowers like the laſt, which appear at the ſame Time. This hath a perennial Root. and an annual Stalk.

The 4th Sort grows naturally in *Virginia* and *Carolina*; this hath a perennial Root, which ſends out many twining Stalks in the Spring; theſe twiſt about any neighbouring Support, and riſe 5 or 6 Feet high, garniſhed at each Joint with two Heart-ſhaped Leaves, which are indented on their Edges, and terminate in acute Points; at each Joint two ſmall Side Branches come out, which are terminated by Cluſters of white Flowers, ſo that the Stalks ſeem covered with them moſt part of their Length, but as theſe come late in the Seaſon, ſo unleſs the Summers prove warm, the Plants do not flower well in *England*.

Another of theſe Plants with purple Flowers, ſtanding on longer Foot Stalks was ſent me from *Campeachy*, but the Stalks and Leaves are very like thoſe of this Sort, ſo that I doubt whether it be a diſtinct Species.

The 5th Sort grows naturally in *New England* and *Virginia*, from both of theſe Countries I have received the Seeds; this hath a perennial Root, and an annual Stalk; it riſes with upright Stalks about a Foot high; theſe have their Joints pretty near each other, where they are garniſhed with roundiſh Heart-ſhaped Leaves, ſitting cloſe to the Stalks; they are ſawed on their Edges, and are of a light green Colour. The Flowers are produced in ſmall looſe Panicles at the Top of the Stalks; they are white, and have two ſmall green Leaves immediately under the Flowers; they appear the latter End of *June*, but the Seeds ſeldom ripen in *England*.

The 6th Sort grows naturally at *La Vera Cruz*, in *America*, from whence I received the Seeds; this hath a ſhrubby climbing Stalk, which riſes to the Height of 10 or 12 Feet, faſtening itſelf to any neighbouring Prop for Support; theſe are garniſhed with Heart-ſhaped Leaves, placed by Pairs oppoſite; they are about three Inches long, and one and a Half broad, of a lucid green; the Flowers come out in long branching Panicles, which proceed from the Side of the Stalks, and the Stalks are terminated by a branching Panicle of white Flowers. This Sort is tender, ſo will not live in this Country without artificial Heat.

The 7th Sort riſes with upright Stalks, 3 Feet high, garniſhed with oval Leaves at each Joint, placed oppoſite by Pairs; they have very ſhort Foot Stalks, and are ſawed on their Edges; from the Sides of the Stalks, at every Joint, are produced two ſlender Branches which ſtand erect; theſe, and the principal Stalks, are terminated by Cluſters of white Flowers in *Auguſt* and *September*; the Stalks decay in Winter, but the Root is perennial. This grows naturally in *Peuſylvania*, and other Parts of *America*.

The 8th Sort grows naturally in *Virginia* and *Philadelphia*; this hath a perennial Root, and an annual Stalk. The Stalks riſe from 2 to 3 Feet high, they are hairy, and garniſhed with rough Leaves at each Joint, which are from 3 to 4 Inches long, and about an Inch broad at their Baſe, gradually leſſening to a very acute Point; the two Leaves are joined at their Baſe, ſo the Stalks ſeem to grow through them; they are of a dark green, and are covered with ſhort Hairs. The upper Part of the Stalk divides into many ſlender Foot Stalks, each ſuſtaining a cloſe Cluſter of white Flowers. Theſe come out in *July*, and in warm Seaſons, the Seeds will ſometimes ripen in *England*.

The 9th Sort grows naturally at *La Vera Cruz*, from whence the Seeds were ſent me; this riſes with an upright Stalk, near 2 Feet high, garniſhed toward the Bottom with oblong obtuſe Leaves, of a thick Subſtance, and crenated on their Edges; the upper Part of the Stalk is naked to the Top, where the Flowers come out in a thick Panicle; they are blue, and have ſingle Empalements. This flowers late in Autumn, but never ripens Seeds here; the Root is biennial, and periſhes ſoon after it has flowered.

The 10th Sort was ſent me from *La Vera Cruz*, where it was found growing naturally; this hath a thick woody Stalk, which riſes 12 or 14 Feet high, ſending out many Branches, which are channelled, and covered with a brown Bark; theſe are garniſhed with regular Heart-ſhaped Leaves, as large as thoſe of the Mulberry Tree; they are of a light green Colour, and ſawed on their Edges, placed by Pairs oppoſite upon Foot Stalks, near 2 Inches long; the upper Part of the Branches are terminated by 4 or 5 Pair of Foot Stalks, which come out oppoſite from the Joints, and the Top is terminated by an odd one; theſe ſuſtain branching Panicles of white Flowers, which together form a long looſe pyramidal Thyrſe, and make a fine Appearance, for there are no Leaves intermixed with the Flowers, but ſo far as the Spike reaches the Stalks are naked. This Sort has flowered in the *Chelſea* Garden, but did not produce Seeds.

The 11th Sort grows naturally at *La Vera Cruz*, this riſes with many ſhrubby Stalks, near 5 Feet high, which divide into many ſlender Branches, whoſe Joints are 3 or 4 Inches aſunder; at each of theſe come out two oval Leaves about three Quarters of an Inch long, and Half an Inch broad, ſtanding upon long ſlender Foot Stalks; they have ſeveral black Spots on their Surface. The Branches come out horizontal, and are terminated by ſmall Bunches of white Flowers, whoſe Empalements are ſingle, and compoſed of ſeven narrow Spear-ſhaped Leaves, divided to the Bottom.

The 12th Sort riſes with an upright round Stalk, to the Height of 3 Feet, ſending out ſeveral Branches toward the Top, which come out regularly by Pairs; oppoſite;

poſite; they are garniſhed with Leaves, placed by Pairs; theſe are two Inches and a Half long, and about one Third of an Inch broad, having three longitudinal Veins; they are of a light green Colour, and entire. The Flowers ſtand upon long Foot Stalks at the End of the Branches, ſome ſuſtaining one, ſome two, and others three or four Flowers; they are white, and appear late in Autumn. This grows naturally in *Carolina*.

The 13th Sort grows naturally in *Maryland*; this hath a perennial Root and an annual Stalk, which riſes 3 Feet high, dividing upward into many Branches, cloſely garniſhed with narrow Spear-ſhaped Leaves, from two to three Inches long, and a Quarter broad, of a deep green ſitting cloſe to the Branches; they have three longitudinal Veins, and the upper Part ſharply ſawed on the Edges, ending in acute Points. The Branches are terminated by roundiſh Cluſters of white Flowers, which appear in *Auguſt*, and continue till *October*, and and in warm Seaſons they are ſucceeded by Seeds which ripen here.

The 14th Sort grows naturally in *Jamaica*, and in moſt of the Iſlands in the *Weſt-Indies*; this riſes with ſhrubby Stalks about 6 or 7 Feet high, dividing into many Branches, garniſhed with Heart-ſhaped Leaves, ending in acute Points, and indented on their Edges, having three longitudinal Veins; the upper Part of the Branches are terminated by ſlender Foot Stalks, each ſuſtaining a ſmall Cluſter of white Flowers, included in oblong ſcaly Empalements of a ſilvery Colour.

The 15th Sort was ſent me from *La Vera Cruz*; this riſes with an upright branching Stalk, 3 Feet high; ſending out two Side Branches from every Joint, almoſt the whole Length, which are terminated by looſe Spikes of red Flowers, as is alſo the principal Stalk. The Leaves are Heart-ſhaped, rough, and crenated on their Edges, ſitting cloſe to the Stalks; they are of a light green, and a little hoary.

The 16th Sort was ſent me from *Jamaica*; this hath ſlender twining Stalks, which faſten themſelves to any neighbouring Support, and riſe 8 or 10 Feet high, ſending out ſmall Branches by Pairs, oppoſite, at moſt of the upper Joints. The Leaves on the lower Part of the Stalk are Heart-ſhaped, ending in acute Points; the upper Leaves are almoſt triangular, ſmooth, and of a lucid green; the upper Part of the Stalks have long branching Spikes of white Flowers, which are ſmall, and ſit cloſe to the Foot Stalks.

The 17th Sort grows naturally in *Penſylvania*; this hath a perennial Root, from which ariſe ſeveral upright Stalks, which grow 7 or 8 Feet high, in a moiſt Soil, or where they are ſupplied with Water in dry Weather; theſe are garniſhed with oval, rough, Spear-ſhaped Leaves, a little ſawed on their Edges; they are placed in Whorls round the Stalks, ſometimes ſeven, at other Places four or five of theſe at each Joint; they are about three Inches long, and two broad. The Stalks are terminated by a looſe Corymbus of purple Flowers, which appear in *Auguſt*, and continue till *October*, but are not ſucceeded by Seeds in *England*.

The 18th Sort riſes with a ſingle upright green Stalk, about 4 Feet high, garniſhed at each Joint, by 4 Spear-ſhaped Leaves placed in Whorls round the Stalks; they are ſix Inches long, and two broad in the Middle, leſſening to both Ends, and terminating in acute Points; they are rough, ſawed on their Edges, and ſtand on ſhort Foot Stalks; the Stalk is terminated by a cloſe Corymbus of purple Flowers, which appear in *July*, and continue till *September*. The Root is perennial, but the Stalks decay every Winter; it grows naturally in *North America*.

The 19th Sort grows naturally in *Carolina*; this hath a creeping Root, which multiplies very faſt. The Stalks riſe about 2 Feet high; they are garniſhed with oval Heart-ſhaped Leaves, which have Foot Stalks, and are ſawed on their Edges. The Flowers are produced at the Top of the Stalks in a Sort of Corymbus; they are of a fine blue Colour, but the Roots ſpread ſo much as to cauſe Barrenneſs of Flowers after the firſt Year.

All theſe Sorts may be propagated by Seeds; ſeveral of them ripen their Seeds in *England*; theſe ſhould be ſown in Autumn as ſoon as they are ripe, for then the Plants will come up the following Spring; but if they are kept out of the Ground till Spring, the Plants will not come up till the Year after; and thoſe Seeds which are procured from *America* ſhould be ſown as ſoon as they arrive, for though they may not grow the firſt Year, yet there will be a greater Certainty of their ſucceeding, than when they are kept longer out of the Ground.

The 2d, 3d, 5th, 7th, 8th, 12th, 13th, 17th, 18th, and 19th Sorts, are hardy Plants; the Seeds of theſe may be ſown in the full Gound, but Care muſt be taken in the ſowing to keep the Sorts ſeparate; for as the Seeds of the Plants have a light Down adhering to them, they are eaſily diſplaced by the leaſt Wind, ſo that the beſt Way will be to ſow them in Drills, but theſe ſhould be but ſhallow, for if the Seeds are buried too deep, they will not grow. The Bed in which theſe are ſown, ſhould not be too much expoſed to the Sun, but rather have an Eaſt Aſpect, where the Morning Sun only reaches it; but where it is more expoſed, it ſhould be ſhaded with Mats in the Heat of the Day, and the Ground kept pretty moiſt; for as theſe Plants generally grow in moiſt ſhady Situations in their native Countries, they will ſucceed better when they have a Soil and Situation ſomewhat like that; though as we want their Heat in Summer, the Plants will thrive here when expoſed to the Sun, provided they have a moiſt Soil, or are ſupplied with Water in dry Weather.

When the young Plants come up, they muſt be kept clean from Weeds, and where they are too cloſe, ſome ſhould be drawn out to give Room for the others to grow, and if theſe are wanted, they may be planted in another Bed, where, if they are ſhaded and watered, they will ſoon take Root; after which they will require no farther Care but to keep them clean from Weeds till the following Autumn, when they may be tranſplanted to the Places where they are to remain. As the Roots ſpread out to a conſiderable Diſtance, they ſhould not be allowed leſs than 3 Feet from any other Plants, and ſome of the largeſt growing ſhould be allowed four Feet. If the Soil in which they are planted is a ſoft gentle Loam, they will thrive much better, and flower ſtronger than in light dry Ground, in which, if they are not duly watered in dry Summers, their

Leaves will ſhrink, and their Stalks will not grow to Half their uſual Height.

All theſe Sorts have perennial Roots, by which they may be propagated; for as ſome of them do not perfect Seeds in *England*, that is the only Way of increaſing the Plants here; ſome of the Sorts have creeping Roots, ſending out Offsets in great Plenty, ſo theſe are eaſily propagated; and the others may be taken up, or the Heads taken off from them every other Year, in doing which Care ſhould be taken not to cut or injure the old Plants too much, which would cauſe them to flower weak the following Year. The beſt Time to remove theſe Plants is in Autumn, as ſoon as they have done growing, that they may get freſh Roots before the Froſt comes on; but if that ſhould happen ſoon after their Removal, if the Surface of the Ground is covered with Tan, or dried Leaves to keep out the Froſt, it will effectually ſecure them; and if this is done to the old Plants in very ſevere Winters, it will always preſerve them, but the 19th Sort is the only one, which I have known killed by Froſt: However, it may not be amiſs to practiſe this on the young Seedling Plants, which have not ſo good Roots, nor are ſo well eſtabliſhed in the Ground; the future Culture will be only to dig the Ground about them every Spring, and keep them clean.

The 4th Sort ſends out many weak twining Stalks, which require Support, ſo there ſhould be ſome Stakes fixed down by their Roots in the Spring when they begin to ſhoot, to which the young Stalks ſhould be lead and faſtened, and afterward they will twine round them and riſe 4 or 5 Feet high if they are ſupplied with Water, and in warm Seaſons they will produce plenty of white Flowers in *Auguſt*. This Sort is ſometimes killed in very ſevere Winters, if not covered; but if, when the Stalks decay in Autumn, the Ground about them be covered with ſome old Tanners Bark, it will effectually ſecure the Roots. This Sort multiplies very faſt by its creeping Roots, which may be parted every other Year.

The 6th and 16th Sorts have twining ſlender Stalks, which require ſupport in like Manner; but theſe are Natives of warm Countries, ſo will not thrive in *England*, unleſs placed in a warm Stove; therefore they ſhould be planted in Pots and plunged into the Tan Bed in the Stove, where, if they are ſupplied with Wet in hot Weather, they will thrive and produce Flowers. The 6th Sort hath ſhrubby Stalks, and does not propagate by the Root, ſo Layers ſhould be made of the young Branches, which will put out Roots if they are properly ſupplied with Water; but the 16th Sort may be propagated by parting the Roots in the ſame Manner as the 4th Sort.

The 9th and 15th Sorts have perennial Roots, but their Stalks decay every Winter. Theſe are tender Plants, ſo ſhould be planted in Pots, and kept conſtantly plunged in the Tan Bed in the Stove, where they will thrive and flower. Theſe may be propagated by cutting off ſome of their young Shoots about the Middle of *June*, when they have Strength, and being planted into Pots filled with light Earth and plunged into a moderate hot Bed, where if ſhaded from the Sun and gently watered as they may require it, they will put out Roots in ſix Weeks, and may then be tranſplanted into ſeparate Pots, and treated as the old Plants.

The 10th, 11th, and 14th Sorts have ſhrubby Stalks, which are perennial. Theſe are Natives of warm Countries, ſo will not thrive in *England* out of a Stove; therefore they ſhould be planted in Pots and kept plunged in the Tan Bed of the Stove, and treated as the former Sorts. Theſe will ſometimes take Root from Cuttings, but not very freely, ſo the beſt Way is from Seeds when they can be procured.

When the Seeds of theſe tender Sorts can be had from their native Countries, the Plants raiſed that Way, are much preferable to thoſe which are obtained by any other Method, and will flower much ſtronger, therefore ſhould be preferred; but as theſe Seeds ſeldom grow the firſt Year, few Perſons have Patience enough to wait for the Plants coming up. When any of theſe Seeds are brought over, they ſhould be ſown in Pots, that they may be removed at any Time; the Pots ſhould be plunged into a moderate hot Bed, and the Earth kept tolerably moiſt, the Glaſſes ſhould alſo be ſhaded in the Heat of the Day, to prevent the Earth from drying; in this hot Bed the Pots may remain till Autumn, when they ſhould be plunged between the Plants in the Bark Stove, and in the Spring removed to a gentle hot Bed, which will bring up the Plants ſoon after. When theſe are fit to remove, they ſhould be planted in ſeparate ſmall Pots, and plunged into the hot Bed again, ſhading them from the Sun till they have taken new Root; then they ſhould have a large Share of free Air admitted to them in warm Weather, and frequently refreſhed with Water.

In the Winter theſe Plants ſhould be more ſparingly watered, eſpecially thoſe Sorts whoſe Stalks decay; and in Summer, they ſhould have a large Share of free Air admitted to them, with which Management they will thrive and flower.

EUPHORBIA. *Lin. Gen. Plant.* 536. *Euphorbium. Boerh. Ind. alt.* 258. *Tithymalus. Tourn. Inſt. R. H.* 85. *Tab.* 18. The Burning Thorny Plant.

The *Characters* are,

The Flower hath a permanent Empalement of one Leaf, which is ſwelling, rough, and divided into 5 *Parts at the Brim. The Flower hath* 4 *or* 5 *thick truncated Petals, and* 12 *or more Stamina which are inſerted in the Receptacle; they are longer than the Petals, and terminated by globular Summits. In the Center is ſituated a three cornered Germen, ſupporting* 3 *bifid Styles, crowned by obtuſe Stigmas. The Germen afterward becomes a roundiſh Capſule with* 3 *Cells, each containing one roundiſh Seed.*

The *Species* are,

1. EUPHORBIA *aculeata triangularis ſubnuda articulata, ramis patentibus Lin. Hort. Cliff.* 196. Euphorbia with triangular jointed Stalks which are naked, and have Spines and ſpreading Branches. This is the *Euphorbium verum antiquorum. Hort. Amſt.* 1. p. 23. True *Euphorbium* of the Ancients.

2. EUPHORBIA *aculeata nuda ſubquinquangularis, aculeis geminatis. Hort. Cliff. Euphorbia* with naked Stalks, which have four or five Angles, and double Spines. This is the *Euphorbium tetragonum & pentagonum ſpinoſum Canarinum. Boerh. Ind. alt.* Canary *Euphorbium.*

3. EUPHRORBIA *aculeata nuda triangularis articulata,*

ramis erectis. Thorny jointed triangular *Euphorbia*, with upright naked Branches. This is the *Euphorbium trigonum & tetragonum ſpinoſum, ramis compreſſis. D'Iſnard. Act. Par.* 1720. Prickly *Euphorbium* having three and four Angles with compreſſed Branches.

4. EUPHORBIA *aculeata nuda multangularis, aculeis geminatis. Lin. Hort. Cliff.* Thorny *Euphorbia* having many Angles and Spines growing by Pairs. This is the *Euphorbium cerei effigie caulibus craſſioribus, ſpinis validioribus armatum. Hort. Amſt.* Torch-ſhaped *Euphorbium*, with thick Stalks armed with ſtrong Spines.

5. EPHORBIA *aculeata ſeminuda, angulis obliquè tuberculatis. Lin. Hort. Cliff.* 196. Thorny half naked *Euphorbia*, with oblique, tubercular Angles, commonly called the Oleander-leaved *Euphorbium.* This is the *Euphorbium anguloſum, foliis nerii latioribus. Boerh. Ind.* Angular *Euphorium*, with broad Oleander Leaves.

6. EUPHORBIA *aculeata nuda, ſeptem-angularis, ſpinis ſolitariis ſubulatis floriferis. Lin. Hort. Cliff.* 196. Naked ſeptangular thorny *Euphorbia*, with ſingle Awl-ſhaped Spines, producing Flowers at their Extremities. This is the *Euphorbium heptagonum, ſpinis longiſſimis in apice fructiferis. Boerh. Ind. alt.* *Euphorbium* with ſeven Angles and very long Spines, bearing Fruit at their Tops.

7. EUPHORBIA *inermis tecta tuberculis imbricatis, foliolo lineari inſtructis. Lin. H. Cliff.* *Euphorbia* without Thorns, and cloſely covered with Tubercles lying over each other like Tiles, and narrow Leaves. This is the *Euphorbium Afrum, caule craſſo ſquamoſo, ramis in capitis Meduſæ ſpeciem cincto. Boerh. Ind. alt.* 258. *African Euphorbium* with a thick ſcaly Stalk, commonly called *Meduſa*'s Head.

8. EUPHORBIA *aculeata nuda, angulis tuberoſis ſpinis interſtinctis. Lin. Sp. Plant.* 451. Naked prickly *Euphorbia*, with tuberous Angles having Spines growing between them.

9. EUPHORBIA *aculeata nuda, multangularis, ſpinis ſolitariis ſubulatis. Prod. Leyd.* 195. Naked thorny *Euphorbia*, with many Angles, and ſingle Awl-ſhaped Spines. This is the *Euphorbium cerei effigie, caulibus gracilioribus. Boerh. Ind. alt.* 1. 258. *Euphorbium* with the Appearance of Torch Thiſtle, and a ſlender Stalk.

10. EUPHORBIA *inermis imbricata tuberculis foliolo lineari inſtructis. Hort. Cliff.* Imbricated *Euphorbia* without Spines, having Tubercles furniſhed with very narrow Leaves. This is the *Euphorbium Afrum, facie fructûs pini. Boerh. African Euphorbium* like the Pine Apple, commonly called Little *Meduſa*'s Head.

11. EUPHORBIA *inermis, ramis patulis ſimplicibus teretibus, foliolis linearibus inſtructis.* *Euphorbia* without Spines, having ſingle ſpreading Branches which are taper, and terminated with very narrow Leaves.

12. EUPHORBIA *inermis ramis teretibus procumbentibus tuberculis quadragonis.* *Euphorbia* without Spines, and having trailing Branches with quadrangular Tubercles.

13. EUPHORBIA *inermis, ramis plurimis procumbentibus, ſquamoſis, foliolis deciduis.* *Euphorbia* without Spines, many trailing ſcaly Branches and deciduous Leaves.

14. EUPHORBIA *inermis fruticoſa ſubnuda filiformis erecta, ramis patulis determinatè confertis. Lin. Hort. Cliff.* 197. Shrubby erect *Euphorbia* without Spines, and ſlender ſpreading Branches terminating in Cluſters, commonly called *Indian* Tree Spurge. This is the *Tithymalus Indicus fruteſcens. Hort. Amſt.* 1. p. 27.

15. EUPHORBIA *inermis fruticoſa nuda filiformis volubilis, cicatricibus oppoſitis. Hort. Cliff.* Shrubby naked *Euphorbia*, without Spines and ſlender twining Branches, commonly called *Indian* Climbing Spurge. This is the *Tithymalus Indicus vimineus penitus aphyllos. Indian* Spurge with ſlender Branches, without Leaves.

16. EUPHORBIA *inermis fruticoſa ſeminuda filiformis flaccida, foliis alternis. Lin. Hort. Cliff.* 197. Naked ſhrubby *Euphorbia*, without Spines, taper flaccid Branches, and Leaves placed alternately, commonly called Tree Spurge of *Mauritania.* This is the *Tithymalus aphyllus Mauritania. Hort. Elth.* 384.

17. EUPHORBIA *foliis oppoſitis ſubcordatis petiolatis emarginatis integerrimis, caule fruticoſo. Lin. Sp. Plant.* 453. *Euphorbia* with Heart-ſhaped Leaves placed oppoſite upon Foot Stalks, which are indented at the Top and entire, and a ſhrubby Stalk. This is the *Tithymalus arboreus Americanus cotini folio. Hort. Amſt.* 1. p. 29. Tree *American* Spurge with a *Venice* Sumach Leaf.

18. EUPHORBIA *umbellâ quadrifidâ, dichotomâ, foliis oppoſitis integerrimis. Lin. Sp. Plant.* 457. *Euphorbia* with a quadrifid dichotomous Umbel, and entire Leaves placed oppoſite. This is the *Tithymalus latifolius Cataputia dictus. H. L.* Broad-leaved Spurge, called *Cataputia.*

19. EUPHORBIA *umbellâ ſuboctifidâ, bifida, involucellis ſubovatis, foliis ſpathulatio patentibus carnoſis mucronatis margine ſcabris. Lin. Sp. Plant.* 461. *Euphorbia* with an Umbel divided into eight Points, whoſe ſmall Involucrums are oval, and ſpreading fleſhy pointed Leaves ſhaped like a Spatula, having rough Borders. This is the *Tithymalus myrſinites latifolius. C. B. P.* 296. Broad leaved Myrtle Spurge.

20. EUPHORBIA *umbellâ multifidâ, dichotomâ, involucellis ſubcordatis, primariis triphyllis, caule arboreo. Lin. Sp. Plant.* *Euphorbia* with a multifid dichotomous Umbel, Heart-ſhaped ſmall Involucrums, the firſt three leaved, and a Tree-like Stalk. This is the *Tithymalus myrtifolius arboreus. C. B. P.* Myrtle-leaved Tree Spurge.

21. EUPHORBIA *umbellâ multifidà, dichotomâ, involucellis perfoliatis orbiculatis, foliis obtuſis. Lin. Sp. Plant.* 463. *Euphorbia* with a multifid Umbel divided by Pairs, orbicular perfoliate Involucrums, and obtuſe Leaves. This is the *Tithymalus characias amygdaloides. C. B. P.* 290. Wood Spurge.

22. EUPHORBIA *umbellâ multifidâ, ſubtrifidâ, bifidâ, involucellis ovatis, foliis lanceolatis, ramis ſterilibus. Lin. Sp. Plant.* 462. *Euphorbia* with a multifid Umbel, which is ſubtrifid and bifid, the ſmall Involucrums oval, Spear-ſhaped Leaves, and ſteril Branches. *Tithymalus paluſtris fruticoſus. C. B. P.* Shrubby Marſh Spurge.

23. EUPHORBIA *umbellâ quinquefidâ, quadrifidâ, dichotomâ, involucellis ſubrotundis acutis, foliis lanceolatis. Lin. Sp. Plant.* 460. *Euphorbia* with a quinquefid and quadrifid dichotomous Umbel, a pointed roundiſh Involucrum, and Spear-ſhaped Leaves. This is the *Tithymalus Orientalis, ſalicis folio, caule purpureo, flore magno. Tourn. Cor.* 2. Eaſtern Spurge with a Willow Leaf, a purple Stalk, and large Flower.

24. EUPHORBIA *umbellâ quinquefidâ, trifidâ dichotomâ, involucellis ovatis, foliis lanceolatis, capſulis lanatis. Lin. Sp. Pl.* 460. *Euphorbia* with a quinquefid, trifid

Umbel, dividing by Pairs, an oval Involucrum, Spear-ſhaped Leaves and woolly Capſules. This is the *Tithymalus arboreus, caule corallino, folio Hyperici, pericarpio barbato. Boerh. Ind.* Tree Spurge with a red Stalk, a St. John's Wort Leaf, and bearded Capſule.

25. EUPHORBIA *umbellâ ſextifidâ, dichotomâ, involucellis ovalibus, foliis integerrimis, ramis nullis capſulis verrucoſis. Lin. Sp. Plant.* 462. *Euphorbia* with a ſix pointed dichotomous Umbel, oval Involucrums, entire Leaves, no Branches, and warted Capſules. This is the *Tithymalus Hybernicus Machingboy dictus. Mer. Pin. Iriſh* Spurge, called Machingboy.

26. EUPHORBIA *umbellâ quinquefidâ, involucellis bifidâ obcordatis. Lin. Sp. Plant.* 457. *Euphorbia* with a quinquefid bifid Umbel, and Heart-ſhaped Involucrums. This isthe *Tithymalus tuberoſâ pyriformi radice. C. B. P.* Spurge with a tuberous Pear-ſhaped Root.

27. EUPHORBIA *umbellâ quinquefidâ, dichotomâ, involucellis ovato-lanceolatis mucronatis, foliis inferioribus ſetaceis. Lin. Sp. Plant.* 458. *Euphorbia* with a quinquefid dichotomous Umbel, oval Spear-ſhaped Involucrums which are pointed, and the lower Leaves briſtly. *Tithymalus Cypariſſius. Alp. Exot.* 65. *Cypreſs* Spurge.

28. EUPHORBIA *umbellâ multifidâ, bifidâ, involucellis orbiculatis, foliis lineari-lanceolatis villoſis. Euphorbia* with a multifid, bifid Umbel, orbicular Involucrums, and narrow Spear-ſhaped hairy Leaves. *Tithymalus Creticus characias, anguſtifolius, villoſus & incanus. Tourn. Cor.* 1. *Cretan* Wood Spurge with narrow hairy and hoary Leaves.

29. EUPHORBIA *umbellâ multifidâ, dichotomâ, involucellis perfoliatis, ſubcordatis, foliis lanceolatis integerrimis. Lin. Sp. Plant.* 463. *Euphorbia* with a multifid dichotomous Umbel, Heart-ſhaped perfoliate Involucrums, and entire Spear-ſhaped Leaves. This is the *Tithymalus ſylvaticus lunato flore. C. B. P.* 290. Wood Spurge with a Moon-ſhaped Flower.

30. EUPHORBIA *inermis foliis ſerratis petiolatis difformibus ovatis lanceolatis panduriformibus. Lin. Sp. Plant.* 453. *Euphorbia* without Spines, having ſawed Leaves with Foot Stalks which are deformed, oval, Spear-ſhaped, and like a Fiddle. *Tithymalus Curaſſavicus, ſalicis & atriplicis foliis variis, caulibus viridantibus. Pluk. Alm.* 396. Spurge from *Curaſſao*, with variable Leaves like Willow and Orach, and a green Stalk.

31. EUPHORBIA *dichotomâ, foliis ſerratis ovali-oblongis glabris, corymbis terminalibus, ramis divaricatis. Lin. Sp. Plant.* 454. Dichotomous *Euphorbia* with oblong, oval, ſmooth, ſawed Leaves, and divaricated Branches, terminated by Umbels. This is the *Tithymalus erectus acris, parietariæ foliis glabris, floribus ad caulium nodos conglomeratis. Sloan. Cat. Jam.* 82. Upright acrid Spurge, with ſmooth Pellitory Leaves, and Flowers growing in Cluſters from the Joints of the Stalk.

32, EUPHORBIA *inermis, herbacea, ramoſa, foliis, ſubcordatis integerrimis petiolatis floribus ſolitariis. Lin. Sp. Plant.* 453. Branching herbaceous *Euphorbia* without Spines, having entire Heart-ſhaped Leaves with Foot Stalks, and ſingle Flowers. This is the *Tithymalus Americanus, erectus, annuus, ramoſiſſimus ocymi caryophyllari foliis. Houſt. Mſſ.* Upright, annual, branching Spurge of *America*, with Leaves like Small Baſil.

The firſt Sort has been generally taken for the true *Euphorbium* of the Ancients, and as ſuch hath been directed for medicinal Uſe; but it is from the ſecond Sort, that the Drug now imported under that Title in *England* is taken. Dr. *Linnæus* ſuppoſes the fourth to be the Sort which ſhould be uſed, though as they are all nearly of the ſame Quality, ſo it may be indifferent which of them that Drug is taken from, which is the inſpiſſated Juice of the Plant.

The 1ſt Sort hath a triangular compreſſed ſucculent Stalk, which is jointed, and riſes to the Height of ſeven or eight Feet, ſending out many irregular twiſting Branches, for the moſt Part three cornered, but have ſometimes only two, and at others four Angles; they are compreſſed, ſucculent, and ſpread out on every Side of the Stalk; theſe have at the Extremity of the Branches a few ſhort roundiſh Leaves, which ſoon fall off; near theſe come out now and then a few Flowers, which have five thick whitiſh Petals, with a large three cornered Germen in the Center; theſe ſoon drop off without having any Seeds. It grows naturally in *India*, from whence the Plants were brought to *Holland*, and ſince communicated to the curious Gardens in *Europe*.

The 2d Sort grows naturally in the *Canary Iſlands*, from whence I have been credibly informed, the *Euphorbium* which is imported into *England*, is now brought. In its native Country this grows 20 Feet high or more, but in *England* is rarely ſeen more than 6 or 7; nor is it of any Advantage to have them ſo tall here, becauſe they ſend out many Branches which are large and ſucculent, ſo render the Plants too heavy to be eaſily removed. This hath a very thick green ſucculent Stalk, which has four or five large Angles or Corners, cloſely armed with black crooked Spines, which come out by Pairs at every Indenture: The Stalks ſend out from every Side large ſucculent Branches of the ſame Form, which extend to the Diſtance of 2 or 3 Feet, then turn their Ends upwards, ſo that when the Plants are well grown, they have ſome Reſemblance to a branched Chandelier; theſe have no Leaves, but are cloſely armed with black Spines like the Stalks; at the End of the Branches come out the Flowers, which are ſhaped like thoſe of the firſt Sort.

The 3d Sort hath a naked three cornered Stalk which is compreſſed, ſending out a great Number of Branches which grow erect, and join up to the main Stalk; theſe are generally three cornered, but ſome vary to four; they are jointed and armed with ſhort crooked Spines, but have no Leaves, nor do the Plants produce Flowers here. This grows naturally in *India*.

The 4th Sort puts out many Stalks juſt above the Surface of the Ground, which are thick, ſucculent, and roundiſh, having 8 or 10 Angles while young, but as they grow old they loſe their Angles and become round; the Branches grow diſtorted and irregular, firſt horizontal, and afterward turn upward; they are armed with ſmall crooked Spines on their Angles, and on the upper Part of the Branches come out the Flowers, which are ſmall, and of a greeniſh white, ſhaped like the 2d Sort. This grows naturally in *India*.

The 5th Sort grows naturally in *India*; this riſes with a ſtrong upright Stalk 5 or 6 Feet high, which hath irregular Angles, and Protuberances oblique to the Angles; the lower Part of the Stalk is naked, the upper Part is branching, and the Branches armed with crooked Spines;

at every Protuberance, and at the Top, they are garniſhed with oblong Leaves of a lucid green, very ſmooth, entire, and rounded at their Ends; theſe fall off, and the Plants remain naked for ſome Months, and then the Flowers come out, which ſit cloſe to the Branches, and are of a greeniſh white Colour; the Leaves come out in Autumn, and fall off in Spring.

The 6th Sort riſes with a roundiſh, upright, ſucculent Stalk about three Feet high, putting out ſeveral Branches on the Side of the ſame Form; theſe have ſeven Angles or Furrows, which are armed with long ſingle black Thorns; at the End of which come out ſmall Flowers, of the ſame Form with thoſe of the other Sorts, and are ſometimes ſucceeded by ſmall Fruit.

The 7th Sort hath thick, roundiſh, ſucculent Stalks, which are ſcaly; theſe ſend out many Branches from their Sides of the ſame Form, which are twiſted, and run one over another, ſo as to appear like a Parcel of Serpents coming out from the Stalks, from whence it had the Appellation of *Meduſa*'s Head. The Ends of the Branches are garniſhed with narrow, thick, ſucculent Leaves, which drop off, and round the upper Part of the Branches the Flowers come out; theſe are white, and of the ſame Form with thoſe of the other Species, but larger, and are frequently ſucceeded by round ſmooth Capſules with three Cells, each including a ſingle roundiſh Seed.

The 8th Sort hath roundiſh Stalks, which ſwell out like a Belly in the Middle, and have knobbed Angles, between which come out long Spines which are ſtrait; theſe Stalks riſe 2 Feet high, and put out a few Branches on their Side of the ſame Form; the Flowers are produced at the End of the Branches, ſitting cloſe upon the Angles; they are ſmall, of a yellowiſh green Colour, and ſhaped like thoſe of the other Species.

The 9th Sort hath Stalks and Branches very like thoſe of the 4th, but much ſlenderer; the Spines of this are ſingle, and thoſe of the other double; and the Ends of the Branches are cloſely garniſhed with Flowers on every Angle, in which it differs from the 4th Sort.

The 10th Sort hath a thick ſhort Stalk, which ſeldom riſes more than eight or ten Inches high, from which come out a great Number of trailing Branches which are ſlender, and grow about a Foot in Length; theſe intermix with each other like thoſe of the 7th Sort, but are much ſmaller, and do not grow near ſo long, but have the ſame Appearance, from whence it is called Little *Meduſa*'s Head; the Ends of theſe Branches are beſet with narrow Leaves, between which the Flowers come out which are white, and ſhaped like thoſe of the other Species.

The 11th Sort riſes with a taper Stalk ſix or ſeven Inches high, ſending out from the Top a few taper Branches, which ſpread out on every Side; theſe are not ſcaly, like thoſe of the laſt Sort, but taper, and garniſhed at their Ends with ſeveral ſmall narrow Leaves which drop off. This Sort hath not yet flowered here, having been but a ſhort Time in *England*.

The 12th Sort hath a ſhort thick Stalk, which never riſes three Inches high, ſo that the Branches ſpread on the Surface of the Ground; theſe ſeldom grow more than ſix Inches long, and their Scales ſwell into a Sort of Proturberances which are ſquare; they have no Leaves, and very rarely produce Flowers in *England*, but has been long an Inhabitant in the Gardens.

The 13th Sort is very like the 7th, but the Stalks never riſe more than a Foot or 15 Inches high, ſo that the Branches ſpread out near the Ground; theſe are alſo much ſhorter than thoſe of the 7th, but have the ſame Appearance, and are garniſhed with narrow Leaves at their End, which fall off as the Branches are extended in Length: This produces a great Number of ſmall white Flowers at the End of the Branches, ſhaped like thoſe of the other Species, and frequently ſucceeded by round ſmooth Capſules with 3 Cells, including one or two roundiſh Seeds which ripen here.

Theſe Sorts have been by modern Botaniſts ranged under the Title of *Euphorbium*, and diſtinguiſhed from the *Tithymali*, more from the Structure and outward Appearance of the Plants, than any real Difference in their Characters; but as the Number of Species of thoſe commonly called Spurge was very great, many of the Writers were willing to ſeparate the *Euphorbia* from that Genus, to leſſen the Number of Species.

Theſe Plants are preſerved in many curious Gardens, more for the Oddneſs of their Structure, than any real Beauty; and being ſo extremely different in their Form, from almoſt any Plants of *European* Production, many curious Perſons have been induced to preſerve the ſeveral Sorts in their Gardens.

They are all of them full of a milky acrid Juice, which flows out on their being wounded in any Part; this Juice will bliſter the Fleſh, if it happens to lie upon any tender Part for a ſhort Time, and will burn Linen almoſt as bad as Aqua Fortis; therefore the Plants ſhould be handled with great Caution; nor ſhould the Ends of their Branches be ever bruiſed or injured, for if they are, it frequently occaſions their rotting down to the next Joint, and ſometimes will deſtroy the whole Plant, if thoſe injured Branches are not cut off in Time; ſo that whenever the Branches appear to have been injured, the ſooner they are cut from the Plants, the leſs Danger there will be of their ſuffering from it; nor ſhould any of the Branches be cut between the Joints, for the ſame Reaſon.

Moſt of theſe Plants were firſt brought to *Europe* by the *Dutch*, who have been very curious to introduce great Numbers of Plants from *India*, and the *Cape of Good Hope*; from the latter there hath been a very great Variety of curious Plants of late Years brought to *Europe*, many of which produce very elegant Flowers, ſo are the greateſt Ornaments of the Conſervatory in the Winter and Spring Seaſons. Theſe have been brought over in Seeds, but the different Kinds of *Euphorbia* came over moſt of them in Plants or Cuttings; for theſe may be eaſily tranſported to any Diſtance, if either of them are put in Boxes, with any ſoft dry Package, to prevent their being bruiſed, or their Spines from wounding each other, and kept from Moiſture and Cold; with this Care they may be kept ſix Months out of the Ground, and if carefully planted will take Root and thrive as well as if they had been newly taken from the old Plants, or out of the Ground but a ſhort Time; which is a much more expeditious Method of obtaining the Plants than from Seeds.

The greateſt Part of theſe ſucculent Plants, grow naturally upon barren rocky Places or in dry ſandy Soils, where few other Plants will thrive; therefore they ſhould never be planted in rich or loamy Earth here, nor ſuffered to receive much Wet, which will cauſe them to rot. The beſt Mixture of Earth for theſe Plants is, about a 4th Part of ſcreened Lime Rubbiſh, a 4th Part of Sea Sand, and half of light freſh Earth from a Common; theſe ſhould be mixed well together, and frequently turned over before it is uſed, that the Parts may be incorporated, and the Compoſt ſweetened by being expoſed to the Air. If this Mixture is prepared a Year before it is wanted, it will be the better, that it may have the Benefit of the Winter's Froſt and the Summer's Heat to mellow it; and the oftener it is turned over, and the ſmaller the Heaps in which it is laid, the Air will penetrate it better, and render it more fit for Uſe.

Theſe Sorts are eaſily propagated by Cuttings, which ſhould be taken from the old Plants in *June*; theſe muſt be cut at a Joint, otherwiſe they will rot: When theſe Cuttings are taken off, the milky Juice of the old Plants will flow out in Plenty; therefore there ſhould be ſome dry Earth or Sand applied upon the wounded Part, which will harden and ſtop the Sap; and the wounded Part of the Cuttings ſhould alſo be rubbed in Sand, or dry Earth, for the ſame Purpoſe; then the Cuttings ſhould be laid in a dry Part of the Stove, for ten Days or a Fortnight; and ſome of thoſe whoſe Branches are large and very ſucculent, may lie 3 Weeks or more before they are planted, that their Wounds may be healed and hardened, otherwiſe they will rot. When the Cuttings are planted, they ſhould be each put into a ſmall Halfpenny Pot, laying Stones or Rubbiſh in the Bottom, and filling the Pots with the Mixture before directed; then plunge the Pots into a moderate hot Bed, and if the Weather is very hot, the Glaſſes of the hot Bed ſhould be ſhaded in the Middle of the Day, and the Cuttings ſhould be gently watered once or twice a Week, according as the Earth may dry: In about 6 Weeks the Cuttings will have put out Roots, ſo if the Bed is not very warm, the Plants may continue there, provided they have free Air admitted to them every Day, otherwiſe it will be better to remove them into the Stove, where they may be hardened before the Winter; for if they are too much drawn in Summer, they are very apt to decay in Winter, unleſs they are very carefully managed. During the Summer Seaſon, the Plants ſhould be gently watered 2 or 3 Times a Week, according to the Warmth of the Seaſon; but in Winter they muſt not be watered oftener than once a Week, and it ſhould be given more ſparingly at that Seaſon, eſpecially if the Stove is not warm: The 1ſt Sort will require more Warmth and leſs Water in the Winter than any of the other. This, if well managed, will grow 7 or 8 Feet high, but the Plants muſt conſtantly remain in the Stove, giving them a large Share of Air in warm Weather, and in Winter the Stove ſhould be kept in a temperate Degree of Warmth.

The 6th Sort is at preſent the moſt rare in *England*: The Plants of this Sort, which have been procured from *Holland*, have been moſt of them deſtroyed by placing them in Stoves, where, by the Heat, they have in one Day turned black, and rotted immediately after. This Sort will do in a dry airy Glaſs Caſe, with Ficoides, and other ſucculent Plants, where they may have free Air in mild Weather, and be protected from Froſt; in Summer the Plants of this Sort may be expoſed in the open Air, in a warm Situation, but ſhould be ſcreened from much Wet: With this Treatment, they will thrive much better than when they are more tenderly nurſed.

The 7th, 8th, 10th, 11th, 12th, and 13th Sorts, are alſo pretty hardy, ſo will live in a good Glaſs Caſe in Winter without Fire, provided the Froſt is kept entirely out, and in Summer they may be placed abroad in a warm Situation: As theſe are very ſucculent Plants, they ſhould not have too much Wet; therefore, if the Summer ſhould prove very moiſt, it will be very proper to place theſe Plants under ſome Shelter, where they may enjoy the free Air, but may be ſcreened from the Rain, otherwiſe by receiving too much Wet they will rot.

The 7th Sort will require to be ſupported, otherwiſe the Weight of the Branches will draw them upon the Pots; and, by training the Stems up to Stakes, they will grow 4 or 5 Feet high, and a great Number of Side Branches will be produced; theſe, being very ſucculent and heavy, are very apt to draw down the Stem, if it hath not Support.

The following Sorts have been, by all the Writers on Botany, placed under the Title of *Tithymalus*; but the 14th and 15th Sorts ſhould, according to their own Diſtinction, have been placed in the Genus of *Euphorbium*, becauſe they are as deſtitute of Leaves as moſt of the Species which they have there placed.

The 14th Sort riſes with a taper ſucculent Stalk, to the Height of 18 or 20 Feet, ſending out many Branches of the ſame Form, which ſubdivide into many ſmaller; theſe are jointed at a great Diſtance; they are ſmooth, and of a deep green Colour, having a few ſmall Leaves at their Extremities, which ſoon fall off. As the Plants grow older, their Stalks become ſtronger and leſs ſucculent, eſpecially toward the Bottom, where they turn to a brown Colour, and become a little woody. The Branches grow diffuſed and intermix with each other, ſo form a Sort of Buſh toward the Top, but this doth not produce Flowers here.

The 15th Sort ſends out a great Number of ſlender taper Stalks, of a dark green Colour, which are ſmooth, and twiſt about each other, or any neighbouring Support, whereby they riſe ten or twelve Feet high, putting out ſmaller Branches upward, which alſo twine and intermix with the other Stalks; they have no Leaves, nor do they flower in *England*. Theſe grow in *India*.

The 16th Sort ſends out many taper ſucculent Stalks from the Root, which riſe about 4 Feet high; they are ſlender and weak, ſo require Support; theſe have a light green Bark, and their lower Parts are naked, but their upper Parts are garniſhed with oblong Leaves, which are ſmooth, entire, and placed alternate on every Side the Stalks: The Flowers are produced in ſmall Cluſters at the End of the Branches, of a yellowiſh green Colour, and are ſometimes ſucceeded by ſmooth round Fruit, but the Seeds rarely ripen in *England*. This Sort grows naturally on the *African* Shore in the *Mediterranean*.

The

The 17th Sort grows naturally in ſome of the Iſlands of the *Weſt-Indies*, and on the Continent. I received Specimens of this Sort from the Iſland of *Tobago*, and from *Carthagena*, where the Plants were growing in Plenty; the *Dutch* Gardens were furniſhed with it from *Curaſſao*, where it grows naturally. This hath an upright Stalk, which riſes 6 or 7 Feet high, covered with a light brown Bark, and divides upward into many Branches; theſe are garniſhed with roundiſh Leaves, indented at their Ends, and have Foot Stalks: They are ſmooth and of a beautiful green, but fall away in Winter, ſo that in Spring they are almoſt naked; the Flowers come out from the End of the Branches, they are yellow and ſmall, ſoon falling away without having any Fruit to ſucceed them here.

Theſe Sorts are propagated by Cuttings, and treated in the ſame Manner as the *Euphorbiums*.

The 14th, 15th, and 17th Sorts, are tender, ſo require a Stove; theſe muſt have the ſame Treatment as the tender Kinds, but the 16th Sort will live in a common Green-houſe in Winter, and may be expoſed abroad in Summer.

The 18th Sort ſtands in the Liſt of medicinal Plants, but is rarely uſed in *England* at preſent; this is a biennial Plant, which periſhes after the Seeds are ripe. It grows naturally in *Italy* and the South of *France*, and where it is allowed to ſcatter its Seeds in a Garden, becomes a Weed here. This riſes with an upright ſucculent Stalk, from 2 to 3 Feet high, garniſhed with oblong ſmooth Leaves placed oppoſite, and ſit cloſe to the Stalks; the upper Part of the Stalk divides by Pairs into ſmaller Branches, and from the Fork between theſe Diviſions come out the Umbels of Flowers, each Fork having one; that which is ſituated in the firſt Diviſion being the largeſt, and thoſe in the upper are the ſmalleſt. The Flowers are of a greeniſh yellow Colour, they appear in *June* and *July*, and the Fruit follows ſoon after, which is divided into 3 Lobes, and has 3 Cells, each containing one roundiſh Seed, which is caſt out to a Diſtance by the Elaſticity of the Pods. This Sort will propagate itſelf faſt enough when it is once introduced into Gardens, ſo requires no Care but to keep it clean from Weeds.

The 19th Sort grows naturally in the South of *France*, *Spain*, and *Italy*. This ſends out many trailing Branches from the Root, which grow about a Foot long, lying on the Ground; theſe are cloſely garniſhed with thick ſucculent Leaves, flat, ſhort, and pointed; they ſpread open on every Side the Branches, and are placed alternate, ſitting cloſe to the Stalks: The Flowers are produced in large Umbels at the End of the Branches; the Involucrum of the principal Umbel is compoſed of ſeveral oval-pointed Leaves, but thoſe of the ſmall Umbels have only two Heart-ſhaped concave Leaves, whoſe Borders are rough; the Flowers are yellow, and are ſucceeded by 3 Seeds, incloſed in a roundiſh Capſule with 3 Cells. This Plant will continue 2 or 3 Years upon a dry warm Soil, and will ripen Seeds annually, which, if permitted to ſcatter, the Plants will come up, and require no other Care but to keep them clean from Weeds.

The 20th Sort grows naturally in *Crete*, and in ſeveral Iſlands of the *Archipelago*; this riſes with an upright branching Stem, to the Height of 4 Feet; the Leaves are oblong, pointed, and placed alternate on the Branches; the Flowers come out in Umbels from the Fork between the Branches; they are ſmall, yellow, and rarely ſucceeded by Seeds in *England*. It is eaſily propagated by Cuttings during any of the Summer Months, and requires a little Protection from the Froſt in Winter.

The 21ſt Sort grows naturally in the Woods, in *England*; it riſes with a ſhrubby Stalk 3 Feet high; the Flowers are produced in Umbels ſitting cloſe to the Stalks, ſo form a long Spike; the Empalements are of a greeniſh yellow, and the Petals black, ſo they make an odd Appearance. It flowers in *May*, and the Seeds ripen in *July*. If the Seeds are ſown under Trees in Autumn, the Plants will riſe the following Spring, and require no Culture.

The 22d Sort ſtands in the Liſt of the medicinal Plants by the Title of *Eſula major*, but at preſent is ſeldom uſed: This grows naturally in *France* and *Germany* on marſhy Places, where it riſes 3 or 4 Feet high. It hath a perennial Root, by which it may be propagated better than by Seeds, which ſeldom grow unleſs they are ſown ſoon after they are ripe.

The 23d Sort was diſcovered in the *Levant*, by Dr. *Tournefort*, who ſent the Seeds to the Royal Garden at *Paris*; this hath a perennial Root, from which ariſe many ſucculent Stalks, 3 Feet high, covered with a purple Bark, and garniſhed with oblong ſmooth Leaves, ſhaped like thoſe of Willow, of a dark green Colour. The upper Part of the Stalks divide, and in the Fork is ſituated an Umbel of Flowers, of a greeniſh yellow Colour, which are ſucceeded by round Capſules with 3 Cells, each containing a ſingle Seed. It flowers in *June*, and the Seeds are ripe in *Auguſt*; this may be propagated by parting the Roots, or by ſowing the Seeds in Autumn. The Plant is hardy ſo will endure the greateſt Cold of this Country, if planted in a dry Soil.

The 24th Sort grows naturally in *Sicily*, and on the Borders of the *Mediterranean* Sea; this riſes with ſeveral ſhrubby Stalks 5 or 6 Feet high, having a red Bark, garniſhed with oblong, ſmooth, blunt Leaves, which are placed alternate. The Flowers grow in ſmall Umbels from the Diviſion of their Branches; they are yellow, and are ſucceeded by roundiſh Capſules, which are rough, having 3 Cells like the other Species. This is eaſily propagated by Cuttings during any of the Summer Months, and requires Protection from Froſt in Winter.

The 25th Sort grows naturally in *Ireland*, from whence the Roots have been brought to *England*; this hath thick fibrous Roots, which ſend up ſeveral Stalks, which do not branch, about a Foot long, garniſhed with oblong Leaves, placed alternate on every Side. The Flowers are produced in ſmall Umbels at the Top of the Stalks; they are yellow, and are ſucceeded by rough warted Capſules with 3 Cells; it flowers in *June*, and the Seeds ripen in *Auguſt*. This may be propagated by the Roots, which ſhould be planted in a ſhady Situation, and a moiſt Soil.

This Plant was almoſt the only Phyſick uſed by the Natives of *Ireland* formerly, but ſince the Uſe of Mercury has been known to them, this has been generally neglected.

The 26th Sort grows naturally in the *Levant*; this hath a knobbed Pear-ſhaped Root, from which ariſe 2 or 3 Stalks, about a Foot and a Half high, garniſhed with oblong Leaves, which are hairy, placed alternate on every Side the Stalk. The Flowers are produced in ſmall Umbels from the Diviſions of the Stalk; they are ſmall of a greeniſh yellow Colour, and are ſeldom ſucceeded by Seeds here; it may be propagated by Offſets, ſent out from the main Root; theſe may be taken off in Autumn, and planted in a ſhady Situation, where they will thrive better than in the full Sun.

The 27th Sort grows naturally at *Aleppo*, and other Parts of the *Levant*; this hath a perennial creeping Root, by which it multiplies very faſt, where it is once eſtabliſhed. The Stalks of this riſe a Foot and a Half high; the lower Leaves are narrow, ſtiff, and briſtly; but thoſe on the upper Part of the Stalk are ſhaped like the narrow leaved Myrtle. The Flowers are produced in large Umbels from the Diviſions of the Stalk; they are yellow, and appear in *June*, but are rarely ſucceeded by Seeds in this Country. The Roots of this ſhould be confined in Pots, for when they are planted in the full Ground, they creep about to a great Diſtance.

The 28th Sort grows naturally in many Parts of the *Levant*, and alſo in *Spain* and *Portugal*. The Seeds of this were brought me from *Scanderoon*, by Mr. *Robert Millar*, who found the Plants growing plentifully there; he aſſured me, he ſaw the Inhabitants wounding theſe Plants, and collecting their milky Juice, which they mixed up with the Scammony to ſend Abroad.

The Seeds of this Plant were ſince ſent me from *Portugal*, by *Robert More*, Eſq; who found the Plant growing there naturally; but it had been many Years before an Inhabitant in the *Engliſh* Gardens; this riſes with a purple ſhrubby Stalk, near 3 Feet high, garniſhed with narrow, Spear-ſhaped, hairy Leaves, ſet cloſely on the Stalk alternately on every Side; the upper Part of the Stalk is terminated by Umbels of Flowers, which form a Sort of Spike. The greater Umbels are multifid, but the ſmall ones are bifid. The Involucrums of the Flowers are yellow, and the Petals of the Flowers black; theſe appear in *May*, and the Seeds ripen in *July*; the young Plants which have been lately raiſed from Seeds, are generally very fruitful, but the old ones, and thoſe raiſed by Cuttings, are barren; this may be propagated by Seeds, or Cuttings, and will live abroad if planted in a dry rubbiſhy Soil, and warm Situation, otherwiſe they are frequently killed by ſevere Froſt.

The 29th Sort grows naturally in the South of *France*, in *Spain*, and *Italy*; this is a biennial Plant, from whoſe Root ariſe 2 or 3 Stalks which grow 2 or 3 Feet high, and are garniſhed with Spear-ſhaped Leaves, which are entire. The Umbels of Flowers ariſe from the Diviſion of the Branches; the Involucrums are Heart-ſhaped, and ſurround the Pedicle with their Baſe. The Flowers are yellow, and appear in *June*. The Seeds ripen in *Auguſt*, which, if permitted to ſcatter, the Plants will come up, and require no Care but to keep them clean from Weeds; this muſt have a ſhady Situation.

The 30th Sort grows naturally at *La Vera Cruz*, from whence Dr. *Houſtoun* ſent me the Seeds; this is annual, and riſes from 2 to 3 Feet high. The Leaves are ſometimes narrow and entire, at other Times oval, and divided in the Middle almoſt to the Midrib, in Shape of a Fiddle; they alſo vary in their Colour, ſome being inclinable to purple, others of a light green; they are ſawed on the Edges, and ſtand on ſhort Foot Stalks. The Flowers are produced in ſmall Umbels at the End of the Branches; they are of a greeniſh white, and are ſucceeded by ſmall round Capſules with 3 Cells.

The 31ſt Sort grows naturally in the Iſlands in the *Weſt-Indies*; this is an annual, and riſes with a branching Stalk about 2 Feet high, garniſhed with oblong, oval, ſmooth Leaves, ſawed on their Edges. The Flowers grow in ſmall Umbels at the Foot Stalks of the Leaves, gathered into cloſe Bunches; theſe are white, and are ſucceeded by ſmall round Capſules, incloſing 3 Seeds.

The Seeds of the 32d Sort were ſent me from *La Vera Cruz*; this alſo is an annual, and riſes with an upright Stalk, about a Foot high, dividing into a great Number of Branches, which ſpread very wide on every Side, garniſhed with roundiſh Heart-ſhaped Leaves, which are entire, ſtanding upon pretty long Foot Stalks. The Flowers come out ſingly from the Diviſions of the Stalk; they are ſmall, of an herbaceous Colour, and are ſucceeded by ſmall round Capſules, containing 3 Seeds.

The laſt 3 Sorts are annual; the Seeds of theſe muſt be ſown on a hot Bed in Spring, and when the Plants are fit to remove, ſhould be each planted in a ſmall Pot filled with light Earth, and plunged into the hot Bed again, and muſt afterward be treated in the ſame Manner as other tender annuals from warm Countries.

EUPHRASIA. Eyebright.

This is a medicinal Plant, which grows naturally in the Fields and Commons in *England*, always among Graſs, Heath, Furz, or ſome other Cover, and will not grow when theſe are cleared from about it, nor will the Seeds grow when ſown in a Garden, for which Reaſon I ſhall not trouble the Reader with a Deſcription, or any farther Account of it, than that the Herb Women ſupply the Markets with it in Plenty from the Fields.

EXCORTICATION. A Pulling or Peeling off the outward Bark of Trees.

EXOTICKS. [*Exotica*, Lat.] Exotick Plants are ſuch as are Natives of Foreign Countries.

F.

FABA. *Tourn. Inſt.* 391. *Tab.* 212. *Vicia. Lin. Gen. Plant.* 782. The Bean; in *French, Féve.*

The *Characters* are,

The Flower hath a tubulous Empalement of one Leaf, cut into five Segments at the Brim; the three lower Segments being long, and the two upper are very ſhort. The Flower is of a Butterfly Kind. The Standard is large, oval, and indented at the End; the two Sides turn backward, after ſome Time; it hath two oblong erect Wings, which incloſe the Keel, being much longer. The Keel is ſhort, ſwelling, and cloſely covers the Parts of Generation; theſe are joined in one Column, almoſt to the Top, where they are divided; the 9 Stamina are in 3 Parts, and one ſtands ſeparate; theſe are terminated by roundiſh reclined Summits. At the Bottom is ſituated an oblong compreſſed Germen, ſupporting a ſhort angular Style, crowned by an obtuſe Stigma, which is bearded on the 2 Sides. The Germen afterward becomes a long, compreſſed, leathery Pod, having one Cell, filled with compreſſed Kidney-ſhaped Seeds.

There are ſeveral Varieties of the Garden Bean, which are known and diſtinguiſhed by the Gardeners, and do not eſſentially differ from each other, ſo I ſhall not enumerate them as diſtinct Species, but ſhall not join theſe to the Horſe Bean, as ſome have done, who have ſuppoſed them to be but one Species; for, having cultivated them more than 30 Years, without finding the Garden Bean degenerate to the Horſe Bean, or the latter improving to the former, I conclude they are diſtinct Species.

There is a great Variety of Garden Beans, now cultivated in the Kitchen Gardens in *England*, which differ in Size and Shape; ſome producing Pods much earlier in the Year than others, for which they are greatly eſteemed by the Gardeners, whoſe Profit ariſes from their early Crops of eſculent Plants, therefore they are very careful to improve all thoſe Varieties which have a Tendency to be fit for the Markets firſt, but as many Sorts of Seeds, when cultivated long in the ſame Land, are apt to degenerate, ſo new Seeds ſhould be annually procured, either from Abroad, or ſome diſtant Situation, where the Soil is of a different Nature, by which Change many of the Varieties may be continued in Perfection.

I ſhall begin with the Garden Bean, called by the Botaniſts, *Faba Major*, to diſtinguiſh it from the Horſe Bean, which they have titled *Faba minor ſeu Equina*, and I ſhall only mention the Names of each, by which they are known among the Gardeners placing them according to their Time of ripening for the Table.

The *Mazagan* Bean is the firſt and beſt Sort of early Bean at preſent known; theſe are brought from a Settlement of the *Portugueſe* on the Coaſt of *Africa*, juſt without the Streights of *Gibraltar*; the Seeds of this are ſmaller than the Horſe Bean; and as the *Portugueſe* are ſlovenly Gardeners, there is commonly a great Number of bad Seeds among them. If this Sort is ſown in *October*, under a warm Hedge, Pale, or Wall, and carefully earthed up when the Plants are advanced, they will be fit for the Table by the Beginning of *May*; the Stems of this Sort are very ſlender, therefore, if they are ſupported by Strings cloſe to the Hedge or Pale, it will preſerve them from the Morning Froſts, which are ſometimes ſevere in Spring, and retards their Growth, ſo by keeping them cloſe to the Fence it will cauſe them to come forwarder than if this is neglected; theſe Beans bear plentifully, but they ripen nearly together, ſo that there are never more than two Gatherings from the ſame Plants; if the Seeds of this are ſaved two Years in *England*, the Beans will become much larger, and not ripen ſo ſoon, which is called a Degeneracy.

The next Sort is the early *Portugal* Bean, which appears to be the *Mazagan* Sort, ſaved in *Portugal*; for it is very like thoſe which are the firſt Year ſaved in *England*; this is the moſt common Sort uſed by the Gardeners for their firſt Crop; but they are not near ſo well taſted as the *Mazagan*; therefore when the *Mazagan* Bean can be procured, no Perſon would plant the other.

The next is the ſmall *Spaniſh* Bean; this will come in ſoon after the *Portugal* Sort, and is a ſweeter Bean, therefore ſhould be preferred to it.

Then comes the broad *Spaniſh*, which is a little later, than the other, but comes in before the common Sorts, and is a good Bearer, therefore is frequently planted.

The *Sandwich* Bean comes ſoon after the *Spaniſh*, and is almoſt as large as the *Windſor*, but, being hardier, is often ſown a Month ſooner; this is a plentiful Bearer.

The *Toker* Bean, as it is generally called, comes about the ſame Time with the *Sandwich*, and is a great Bearer, therefore it is now much planted.

The white and black Bloſſom Beans are by ſome much eſteemed; the Beans of the former are, when boiled, almoſt as green as Peas, and being a ſweet Bean, renders it more valuable; theſe Sorts are very apt to degenerate, if their Seeds are not ſaved with great Care.

The *Windſor* Bean is allowed to be the beſt of all the Sorts for the Table; when theſe are planted on a good Soil, and allowed ſufficient Room, their Seeds will be very large, and in great Plenty; and when gathered young, are the ſweeteſt and beſt taſted of all the Sorts; but theſe ſhould be carefully ſaved, by pulling out ſuch of the Plants as are not perfectly right, and afterward by ſorting out all the good from the bad Beans.

This Sort of Bean is ſeldom planted before *Chriſtmas*, becauſe it will not bear the Froſt ſo well as many of the other Sorts, ſo it is generally planted for the great Crop, to come in *June* and *July*.

All the early Beans are generally planted on warm Borders under the Walls, Pales, and Hedges; and thoſe which are deſigned to come firſt are uſually planted in a ſingle Row pretty cloſe to the Fence; and here I cannot help taking Notice of a very bad Cuſtom, which too generally prevails in Gentlemens Kitchen Gardens, which is that of planting Beans cloſe to the Garden Walls, on the beſt Aſpects, immediately before the Fruit Trees, which certainly is a greater Prejudice to the Trees, than the Value of the Beans, or any other early Crop;

therefore this Practice ſhould be every-where diſcouraged ; for it is much better to run ſome Reed Hedges acroſs the Quarters of the Kitchen Garden, where early Beans and Peas may be planted, in which Places they may with more Conveniency be covered in ſevere Froſt ; and to theſe Hedges the Beans may be cloſely faſtened, as they advance in Growth ; which, if practiſed againſt the Walls where good Fruit Trees are planted, will greatly prejudice the Trees by overſhadowing them, and the Growth of theſe Legumes will draw off the Nouriſhment from the Roots of the Trees, whereby they will be greatly weakened.

But to return to the Culture of the Beans. Thoſe which are planted early in *October* will come up by the Beginning of *November* ; and as ſoon as they are two Inches above Ground, the Earth ſhould be carefully drawn up with a Hoe to their Stems, and this muſt be two or three Times repeated, as the Beans advance in Height, this will protect their Stems from the Froſt, and encourage their Strength. If the Winter ſhould prove ſevere, it will be very proper to cover the Beans with Peas Haulm, Fern, or ſome other light Covering, which will ſecure them from the Froſt ; but this Covering muſt be conſtantly taken off in mild Weather, otherwiſe the Beans will draw up tall and weak, and come to little ; and if the Surface of the Border is covered with Tanners Bark, it will prevent the Froſt from penetrating the Ground to the Roots of the Beans, and be of great Service to them.

In Spring, when the Beans are advanced a Foot high, they ſhould be faſtened up to the Hedge with a ſmall Line, ſo as to draw them as cloſe as poſſible ; this will ſecure them from being injured by Morning Froſts, which are often ſo ſevere in *April*, as to lay thoſe Beans flat on the Ground, which are not thus guarded ; at this Time all Suckers from the Roots ſhould be very carefully taken off ; for theſe will retard the Growth of the Beans, and prevent their coming early ; and when the Bloſſoms begin to open toward the Bottom of the Stalks, the Top of the Stems ſhould be pinched off, which will cauſe thoſe firſt Pods to ſtand, and thereby bring them forward. If theſe Rules are obſerved, and the Ground kept clean from Weeds, or other Plants, there will be little Danger of their failing.

But leſt this firſt Crop ſhould be deſtroyed by Froſt, it will be abſolutely neceſſary to plant more about 3 Weeks after the firſt, and ſo to repeat planting more every three Weeks, or a Month, till *February* ; but thoſe planted toward the End of *November*, or the Beginning of *December*, may be planted on ſloping Banks, at a Diſtance from the Hedges ; for if the Weather is mild, theſe will not appear above Ground before *Chriſtmas* ; therefore will not be in ſo much Danger as the firſt and ſecond Planting, eſpecially if the Surface of the Ground is covered with Tan to keep out the Froſt as is before directed ; for the firſt Planting, will, by that Time, be a conſiderable Height ; the Directions before given will be ſufficient for the Management of theſe, only it muſt be obſerved, that the larger Beans ſhould be planted at a greater Diſtance than the ſmall ones ; alſo, that thoſe which are firſt planted muſt be put cloſer together, to allow for ſome miſcarrying ; therefore, where a ſingle Row is planted, the Beans may be put 2 Inches aſunder, and thoſe of the third and fourth Planting may be allowed 3 Inches ; and when they are planted in Rows acroſs a Bank, the Rows ſhould be two Feet and a Half aſunder ; but the *Windſor* Beans ſhould have a Foot more Space between the Rows, and the Beans in the Rows ſhould be planted 5 or 6 Inches aſunder. This Diſtance may, by ſome Perſons, be thought too great ; but from many Years Experience, I can affirm, that the ſame Space of Ground will produce a greater Quantity of Beans, when planted at this Diſtance, than if double the Quantity of Seeds are put on it. In the Management of theſe later Crops of Beans, the principal Care ſhould be to keep them clear from Weeds, and any other Plants, which would draw away their Nouriſhment ; to keep earthing them up, and, when they are in Bloſſom, to pinch off their Tops, which, if ſuffered to grow, will draw the Nouriſhment from the lower Bloſſoms, which will prevent the Pods from ſetting, and the upper Parts only of the Stems will be fruitful ; another Thing ſhould be obſerved in planting the ſucceeding Crops, which is to make Choice of moiſt ſtrong Land for the later Crops, for if they are planted on dry Ground, they rarely come to much.

Theſe after Crops ſhould be planted at about a Fortnight Diſtance from *February* to the Middle of *May*, after which Time it is generally too late to plant, unleſs the Land is very ſtrong and moiſt ; for in warm dry light Land all the late Crops of Beans are generally attacked by the black Inſects, which cover all the upper Part of their Stems, and ſoon cauſe them to decay.

Where the Seeds are deſigned to be ſaved, a ſufficient Number of Rows ſhould be ſet apart for that Purpoſe, according to the Quantity deſired ; theſe ſhould be managed in the ſame Way as thoſe which are deſigned for the Table ; but none of the Beans ſhould be gathered, though there are ſome covetous Perſons, who will gather all the firſt ripe for the Table, and are contented to ſave the after Crop for Seed, but theſe are never ſo large and fair as the firſt ; ſo that if theſe are for Sale, they will not bring near the Price as the other, therefore what is gained to the Table, is loſt in the Value of the Seed ; but thoſe who are deſirous to preſerve the ſeveral Varieties, as pure as poſſible, ſhould never ſuffer two of the Varieties to grow for Seeds in the ſame Place, for by their Farina mixing with each other, they will not continue ſo pure, but be very apt to vary ; and in order to keep the early Kinds perfect, thoſe which come the earlieſt ſhould be ſaved for Seeds ; but this is what few People chooſe to do, becauſe they are then the moſt valuable.

When the Seed is ripe, the Stalks ſhould be pulled up, and ſet upright againſt a Hedge to dry, obſerving to turn them every third Day, that they may dry equally ; then they may be threſhed out, and cleaned, or otherwiſe ſtacked up in a Barn, till there is more Leiſure for threſhing them out ; and afterward the Seed ſhould be drawn over, to take out all thoſe that are not fair, preſerving the beſt for Uſe or Sale.

It is a very good Method to change the Seeds of all Sorts of Beans, and not to ſow and ſave the Seeds long in the ſame Ground, for they do not ſucceed ſo well ; therefore, if the land is ſtrong where they are to be planted, it will be the beſt Way to procure the Seeds from a lighter Ground, and ſo *vice verſa* ; by this Method the Crops will be larger, the Beans fairer, and not ſo liable to degenerate.

Having given Directions for the Culture of the Garden Beans, I ſhall next proceed to that of the *Horſe* Bean, which is cultivated in the Fields; there are 2 or 3 Varieties of theſe, which differ in Size and Colour, but that which is now in the greateſt Eſteem, is called the *Tick* Bean; this doth not grow ſo high as the other, is a more plentiful Bearer, and ſucceeds better on light Land than the common *Horſe* Bean.

The *Horſe* Bean delights in a ſtrong moiſt Soil, and an open Expoſure, for they never thrive well on dry warm Land, or in ſmall Incloſures, where they are very ſubject to blight, and are frequently attacked by a black Inſect, which the Farmers call the black Dolphin; theſe Inſects are often in ſuch Quantities, as to cover the Stems of the Beans entirely, eſpecially all the upper Part of them, and whenever this happens, the Beans ſeldom come to good; but in the open Fields where the Soil is ſtrong, this rarely happens.

Theſe Beans are uſually ſown on Land freſh broken up, becauſe they are of Uſe to break and pulverize the Ground, alſo to deſtroy Weeds; ſo the Land is rendered much better for Corn, after a Crop of Beans, than it would have been before, eſpecially if they are ſown and managed according to the New Huſbandry, with a Drill Plough, and the Horſe Hoe uſed to ſtir the Ground between the Rows of Beans, which will prevent the Growth of Weeds, and pulverize the Ground, whereby a much greater Crop of Beans may, with more Certainty, be expected, and the Land will be better prepared for whatever Crop it is deſigned for after.

The Seaſon for ſowing Beans is from the Middle of *February* to the End of *March*, according to the Nature of the Soil; the ſtrongeſt and wet Land ſhould always be laſt ſown; the uſual Quantity of Beans, ſown on an Acre of Land, is about 3 Buſhels, but this is double the Quantity which need be ſown, according to the New Huſbandry; but I ſhall firſt ſet down the Practice according to the Old, and then give Directions for their Management according to the New. The Method of ſowing is after the Plough, in the Bottom of the Furrows, but then the Furrows ſhould not be more than five, or, at moſt, ſix Inches deep. If the Land is new broken up, it is uſual to plough it early in Autumn, and let it lie in Ridges till after *Chriſtmas*; then plough it in ſmall Furrows, and lay the Ground ſmooth; theſe two Ploughings will break the Ground fine enough for Beans, and the third Ploughing is to ſow the Beans, when the Furrows ſhould be made ſhallow, as was before-mentioned.

Moſt People ſet their Beans too cloſe; for, as ſome lay the Beans in the Furrows after the Plough, and others lay them before the Plough, and plough them in, ſo, by both Methods the Beans are ſet as cloſe as the Furrows are made, which is much too near; for when they are on ſtrong good Land, they generally are drawn up to a very great Height, and are not ſo apt to Pod as when they have more Room, and are of lower Growth; therefore I am convinced by ſome late Trials, that the better Way is to make the Furrows two Feet aſunder, or more, which will cauſe them to branch out into many Stalks, and bear in greater Plenty than when they are cloſer; by this Method half the Quantity of Beans will be ſufficient for an Acre of Land, and by the Sun and Air being admitted between the Rows; the Beans will ripen much earlier and more equally than in the common Way.

What has been mentioned muſt be underſtood as relating to the Old Huſbandry; but where Beans are planted according to the New, the Ground ſhould be four Times ploughed before the Beans are ſet, which will break the Clods and render it much better for planting; than with a Drill Plough, to which a Hopper is fixed for ſetting the Beans, the Drills ſhould be made at three Feet aſunder, and the Spring of the Hopper ſet ſo as to ſcatter the Beans at three Inches Diſtance in the Drills. By this Method, leſs than one Buſhel of Seed will plant an Acre of Land. When the Beans are up, if the Ground is ſtirred between the Rows with a Horſe Plough, it will deſtroy all the young Weeds; and when the Beans are advanced about three or four Inches high, the Ground ſhould be again ploughed between the Rows, and the Earth laid up to the Beans; and if a third Ploughing, at about five or ſix Weeks after is given, the Ground will be kept clean from Weeds, and the Beans will ſtalk out, and produce a much greater Crop than in the common Way.

When the Beans are ripe, they are reaped with a Hook, as is uſually practiſed for Peas; and after having lain a few Days on the Ground they are turned, and this muſt be repeated ſeveral Times, until they are dry enough to ſtack; but the beſt Method is to tie them in ſmall Bundles, and ſet them upright; for then they will not be in ſo much Danger to ſuffer by Wet, as when they lie on the Ground; and they will be more handy to carry and ſtack, than if they are looſe. The common Produce is from twenty to twenty-five Buſhels on an Acre of Land.

The Beans ſhould lie in the Mow to ſweat, before they are threſhed out; for as the Haulm is very large and ſucculent, ſo it is very apt to give and grow moiſt; but there is no Danger of the Beans receiving Damage, if they are ſtacked tolerably dry, becauſe the Pods will preſerve the Beans from Injury; and they will be much eaſier to threſh after they have ſweat in the Mow, than before; and after they have once ſweated and are dry again, they never after give.

By the New Huſbandry, the Produce has exceeded the Old by more than ten Buſhels on an Acre; and if the Beans which are cultivated in the common Method are obſerved, it will be found that more than half their Stems have no Beans on them; for by ſtanding cloſe, they are drawn up very tall, ſo the Tops of the Stalks only produce, and all the lower Part is naked; whereas in the New Method, they bear almoſt to the Ground; and as the Joints of the Stems are ſhorter, ſo the Beans grow cloſer together on the Stalks.

FABA ÆGYPTIACA, is the Arum Ægyptiacum.

FABA CRASSA, is Anacampſeros.

FABAGO. *See* Zygophyllum.

FAGONIA. *Tourn. Inſt. Lin. Gen. Plant.* 475. So named by Dr. *Tournefort*, in Honour of Dr. *Fagon*, who was Superintendent of the Royal Garden at *Paris*.

The *Characters* are,

The Flower hath a ſpreading Empalement, compoſed of

5 ſmall Leaves; it hath 5 Heart-ſhaped Petals, which ſpread open, and are narrow at their Baſe, where they are inſerted in the Empalement. It hath 10 erect Stamina, terminated by roundiſh Summits. In the Center is ſituated a five cornered Germen, ſupporting an Awl-ſhaped Style, crowned by a ſingle Stigma. The Germen becomes a roundiſh Capſule having 5 Lobes ending in a Point, and 5 Cells, each having a ſingle roundiſh Seed.

The *Species* are,

1. FAGONIA *ſpinoſa, foliolis lanceolatis planis lævibus. Hort. Upſal.* 103. Prickly *Fagonia*, whoſe Leaves are Spear-ſhaped, plain, and ſmooth. This is the *Fagonia Cretica ſpinoſa. Tourn.* Thorny Trefoil of *Candia*.

2. FAGONIA *inermis. Lin. Sp. Plant.* 386. *Fagonia* without Spines. This is the *Fagonia Hiſpanica non ſpinoſa. Tourn. Spaniſh Fagonia* without Thorns.

3. FAGONIA *ſpinoſo foliolis linearibus convexis. Lin. Sp. Plant.* 386. Prickly *Fagonia*, with narrow convex Leaves. This is the *Fagonia Arabica, longiſſimis aculeis armato. Shaw. Pl. Afr.* 229. *Arabian Fagonia* armed with very long Spines.

4. FAGONIA *ſpinoſa foliolis lanceolato-linearibus planis, floribus majoribus.* Prickly *Fagonia*, having narrow, Spear-ſhaped, plain Leaves and larger Flowers. This is the *Fagonia Hiſpanica, minùs ſpinoſa, flore magno purpuraſcente. Juſſieu. Spaniſh* leſs prickly *Fagonia*, having a large purpliſh Flower.

The 1ſt Sort is a Native of the Iſland of *Candia*: This has been deſcribed by ſome Botaniſts under the Title of *Trifolium ſpinoſum Creticum*, which occaſioned my giving it the *Engliſh* Name of Thorny Trefoil of *Crete*; though there is no other Affinity between this and the Trefoil, than that of this having three Leaves or Lobes on the ſame Foot Stalk.

This is a low Plant, and ſpreads its Branches cloſe to the Ground, which are extended to the Length of a Foot or more every Way, garniſhed with ſmall trifoliate Leaves placed oppoſite; theſe are oval, plain, and ſmooth, and at each Joint, immediately below the Leaves, come out two Pair of Spines, one on each Side the Stalk; and at the ſame Places come out a ſingle blue Flower, ſtanding upon a ſhort Foot Stalk, compoſed of 5 Spear-ſhaped Petals, narrow at their Baſe, where they are inſerted into the Empalement; after theſe fall, the Germen turns to a roundiſh five lobed Capſule, ending in an acute Point, having 5 Cells, each containing one roundiſh Seed. It flowers in *July* and *Auguſt*, but unleſs the Seaſon proves warm, the Seeds do not ripen in *England*.

The 2d Sort grows naturally in *Spain*; this differs from the firſt in being ſmooth, the Branches of this having no Thorns; and the Plant will live two Years, whereas the firſt is annual.

The 3d Sort was diſcovered by the late Dr. *Shaw* in *Arabia*; this is a low Plant with a ſhrubby Stalk, from whence come out ſeveral weak Branches armed with long Thorns; the Leaves are thick, narrow, and convex on their lower Side; the Flowers come out in the ſame Manner as in the firſt Sort.

The 4th Sort grows naturally in *Spain*, where it was diſcovered by Dr. *Juſſieu*. This is an annual, with trailing Branches like the firſt Sort; but the Leaves are much narrower, and the Spines ſmaller and fewer in Number; the Flowers are larger, and of a pale purple Colour.

Theſe Plants are propagated by Seeds, ſown upon a Border of freſh light Earth, where they are deſigned to remain, for they do not bear tranſplanting well; when the Plants come up, they may be thinned out to the Diſtance of 10 or 12 Inches; and if they are kept clean from Weeds, they will require no other Care.

The 1ſt and 4th Sorts are annual Plants, which do not perfect their Seeds in *England*, unleſs the Seaſons prove very warm; therefore the beſt Way is to ſow their Seeds upon a warm Border in Autumn, and in froſty Weather ſhelter the Plants with Mats or ſome other Covering to ſecure them; or if they are ſown in Pots and placed under a Frame in the Winter, and the following Spring ſhaken out of the Pots, and planted in a warm Border, they will come early to flower, and thereby ripe Seeds may be more certainly obtained.

The other two Sorts may be treated in the ſame Way, for as theſe ſeldom flower the firſt Year from Seeds, the Plants ſhould be either kept in Pots, and ſheltered under a Frame in Winter, or placed in a warm Border, where they may be ſheltered with Mats, or ſome other Covering, to preſerve them from Froſt; the following Summer the 2d Sort will flower and produce ripe Seeds, but the 3d has not perfected any Seeds as yet in *England*.

FAGOPYRUM. *See* Helxine.

FAGUS. *Tourn. Inſt. Lin. Gen. Plant.* 951. The Beech Tree; *French, Hêtre.*

The *Characters* are,

It hath male and female Flowers on the ſame Tree; the male Flowers are collected into globular Heads; theſe have no Petals, but have ſeveral Stamina included in an Empalement of one Leaf, which are terminated by oblong Summits. The female Flowers have a one leaved Empalement cut into 4 Parts, but have no Petals; the Germen is fixed to the Empalement, ſupporting 3 Styles, crowned by reflexed Stigmas. The Germen becomes a roundiſh Capſule, armed with ſoft Spines, opening in 3 Cells, each containing a triangular Nut.

We have but one *Species* of this Genus, *viz.*

FAGUS. *Dod. Pempt.* 832. The Beech Tree. This is the *Fagus foliis ovatis obſoletè ſerratis. Hort. Cliff.* 447. The Beech Tree with oval ſawed Leaves.

Some Planters ſuppoſe there are two diſtinct Species of this Tree; one they call the Mountain Beech, which they ſay is a whiter Wood than the other, which they diſtinguiſh by the Title of Wild Beech; but it is certain, that this Difference in the Colour of the Wood, ariſes from the Difference of the Soils in which they grew, for I have not ſeen any ſpecific Difference in the Trees. There have been Seeds of a Beech Tree brought from *North America*, by the Title of Broad leaved Beech; but the Plants which were raiſed from them, proved to be the common Sort, ſo that we know of no other Variety, excepting thoſe with ſtriped Leaves, which is accidental, and when the Trees are in Vigour, the Leaves become plain again.

This Tree is propagated by ſowing the Maſt; the Seaſon for which is any Time from *October* to *February*, only obſerving to ſecure the Seeds from Vermin when early ſowed; which, if carefully done, the ſooner they are ſown the better, after they are fully ripe: a ſmall Spot of Ground will be ſufficient for raiſing a great Number of theſe Trees from Seed, but you muſt be very careful to keep them clear from Weeds; and if the Plants come up very thick, you ſhould not fail to draw out the ſtrongeſt of them the Autumn following, that thoſe left may have room to grow; ſo that if you huſband a Seed Bed carefully, it will afford a three Years Draught of young Plants, which ſhould be planted in a Nurſery; and, if deſigned for Timber Trees, at three Feet Diſtance, Row from Row, and 18 Inches aſunder in the Rows.

But if they are deſigned for Hedges (to which the Tree is very well adapted) the Diſtance need not be ſo great; two Feet Row from Row, and one Foot in the Rows will be ſufficient. In this Nurſery they may remain 2 or 3 Years, obſerving to clear them from Weeds, alſo to dig the Ground between the Roots, at leaſt once a Year, that the tender Roots may better extend themſelves each Way: But be careful not to cut or bruiſe their Roots, which is injurious to all young Trees; and never dig the Ground in Summer, when the Earth is hot and dry; which by letting in the Rays of the Sun to the Roots, is often the Deſtruction of young Trees.

This Tree will grow to a conſiderable Stature, though the Soil be ſtony and barren, alſo upon the Declivities of Hills, and chalky Mountains, where they will reſiſt the Winds better than moſt other Trees; but the Nurſeries for the young Plants ought to be on the ſame Soil, for if they are raiſed in good Soil and a warm Expoſure, and afterwards tranſplanted into a bleak barren Situation, they ſeldom thrive, which holds true in moſt other Trees; therefore I would adviſe the Nurſery to be made on the ſame Soil where the Plantation is intended, but of this ſee more under the Article *Nurſery*.

The Tree is very proper to form large Hedges to ſurround Plantations, or large Wilderneſs Quarters; and may be kept in a regular Figure, if ſheared twice a Year, eſpecially if they ſhoot ſtrong; in which Caſe, if they are neglected but a Seaſon or two, it will be difficult to reduce them again. The Shade is very injurious to moſt Sorts of Plants which grow near it, but is generally believed to be very ſalubrious to human Bodies.

The Timber is of great Uſe to Turners for making Trenchers, Diſhes, Trays, Buckets; and to the Joiner for Stools, Bedſteads, Coffins, &c. The Maſt is very good to fat Swine and Deer; it alſo affords a ſweet Oil, and hath in ſome Families ſupported Men with Bread.

This Tree delights in a chalky or ſtony Ground, where it generally grows very faſt; and the Bark of the Trees in ſuch Land, is clear and ſmooth; although the Timber is not ſo valuable as that of many other Trees, yet as it will thrive on ſuch Soils and in ſuch Situations where few better Trees will grow, the Planting of them ſhould be encouraged eſpecially as the Trees afford an agreeable Shade, and the Leaves make a fine Appearance in Summer, and continue green as long in Autumn as any of the deciduous Trees: Therefore in Parks, and other Plantations for Pleaſure, this Tree deſerves to be cultivated among thoſe of the firſt Claſs, eſpecially where the Soil is adapted to it.

The two Sorts with variegated Leaves may be propagated by budding or grafting them upon the common Beech, obſerving not to plant them in rich Earth; which will cauſe the Buds or Cyons to ſhoot vigorouſly, whereby the Leaves will become plain, which often happens to moſt variegated Plants.

FARINA FŒCUNDANS is the impregnating Meal or Duſt on the *Apices* of Flowers; which, being conveyed into the *Uterus* or *Vaſculum Seminale* of Plants, fecundates the Rudiments of the Seeds in the Ovary, which otherwiſe would decay and come to nothing. See *Generation of Plants*.

FEATHERFEW, or FEAVERFEW. *See* Matricaria.

FENCES. In hotter Climates than *England*, where they have not occaſion for Walls to ripen their Fruit, their Gardens lie open, where they can have water, Fence and Proſpects; or elſe they bound their Gardens with Groves, in which are Fountains, Walks, &c. which are much more pleaſing to the Sight than a dead Wall: But in colder Countries, and in *England*, we are obliged to have Walls to ſhelter and ripen our Fruit, although they take away much from the pleaſant Proſpect of the Garden.

Since therefore we are under a Neceſſity to have Walls to ſecure our Gardens from the Injury of Winds, as well as for the Conveniency of Partitions or Incloſures, and alſo to ripen our Fruit, Brick Walls are accounted the warmeſt and beſt for Fruit: And theſe Walls being built Pannel-ways, with Pillars at equal Diſtances, will ſave a great deal of Charge, in that the Walls may be built thinner, than if they were built plain without theſe Pannels, for then it would be neceſſary to built them thicker every where: And beſides, theſe Pannels make the Walls look the handſomer.

Stone Walls are by ſome preferred to Brick, eſpecially thoſe of ſquare hewn Stones; but where they are deſigned for Fruit, they ſhould be faced with Brick. Thoſe that are made of rough Stones, though they are very dry and warm, yet by Reaſon of their Unevenneſs, are inconvenient to nail Trees to, except Pieces of Timber be laid in them here and there for that Purpoſe.

But in large Gardens it is better to have the Proſpect open to the Pleaſure Garden, which ſhould be ſurrounded with a Foſſe, that from the Garden the adjacent Country may be viewed, but this depends upon the Situation of the Place; for if the Proſpect from the Gardenen is not good, it had better be ſhut out from Sight by a Wall, or any other Fence; alſo, where a Garden lies near a populous Town, and the adjoining Grounds are open to the Inhabitants, if the Garden is open, there will be no walking there in good Weather, without being expoſed to the View of all Paſſengers, which is very diſagreeable.

Where theſe Foſſes are made round a Garden which it ſituated in a Park, they are extremely proper; becauſe hereby the Proſpect of the Park will be obtained in the Garden, which renders theſe Gardens much more agreeable than thoſe which are confined.

In making theſe Foſſes there have been many Inventions;

tions; but upon the whole, I have not ſeen any which are in all Reſpects preferable to thoſe which have an upright Wall next the Garden; which (where the Soil will admit of a deep Trench) ſhould be 5 or 6 Feet high; and from the Foot of this Wall, the Ground on the Outſide ſhould riſe with a gradual eaſy Slope to the Diſtance of 18 or 20 Feet; and where it can be allowed, if it ſlopes much farther, it will be eaſier and leſs perceptible; as a Ditch to the Eye, when viewed at a Diſtance. But if the Ground is naturally wet, ſo as not to admit of a deep Foſſe, then, in order to make a Fence againſt Cattle, if the Wall be 4 Feet high, and ſlight Poſts of 3 Feet high are placed juſt behind the Wall, with a ſmall Chain carried on from Poſt to Poſt, no Cattle or Deer will ever attempt to jump againſt it, therefore it will be a ſecure Fence againſt them; and if theſe are painted of a dark Colour, they will not be diſcerned at a Diſtance; and the Chain will ſecure Perſons walking in the Garden from tumbling over.

In ſuch Places where no good Proſpects can be obtained from a Garden, it is common to make the Incloſure of Park Paling; which, if well performed, will laſt many Years, and has a much better Appearance than a Wall: This Pale may be hid from the Sight within, by Plantations of Shrubs and Ever-greens; or there may be a quick Hedge planted within the Pale, which may be trained up, ſo as to be an excellent Fence by the Time the Pales begin to decay.

Some Perſons make Stuckade Fences round their Gardens to keep out Cattle, *&c.* which, when well made, will anſwer the Purpoſe of a Fence; but this being very expenſive, and not of very long Duration, has occaſioned their not being more commonly in Uſe.

As to Fences round Parks, they are generally of Paling; which, if well made of Winter-fallen Oak, will laſt many Years; but a principal Thing to be obſerved in making theſe Pales is not to make them too heavy, for when they are ſo, their own Weight will cauſe them to decay; therefore the Pales ſhould be cleft thin, and the Rails ſhould be cut triangular, to prevent the Wet lodging upon them; and the Poſts ſhould be good, and not placed too far aſunder. If theſe Things are obſerved, one of theſe Pales will laſt, with a little Care, upward of forty Years very well. The common Way of making theſe Fences is, to have every other Pale nine or ten Inches above the intermediate ones; ſo that the Fence may be ſix Feet and a Half high, which is enough for Fallow Deer; but where there are Red Deer, the Fence ſhould be one Foot higher, otherwiſe they will leap over.

Some incloſe their Parks with Brick Walls; and where Stone is cheap, the Walls are built with this Material; ſome with, and others without Mortar.

A Kitchen Garden, if rightly contrived, will contain Walling enough to afford a Supply of ſuch Fruits as require the Aſſiſtance of Wall for any Family; and this Garden being ſituated on one Side, and quite out of Sight of the Houſe, may be ſurrounded with Walls, which will ſcreen the Kitchen Garden from the Sight of Perſons in the Pleaſure Garden; and being locked up, the Fruit will be much better preſerved than it can be in the publick Garden: The having too great a Quantity of Walling is often the Occaſion that ſo many ſcandalous Trees are to be ſeen in large Gardens, where due Care is not obſerved in their Management.

And beſides, the Borders of Pleaſure Gardens are generally too narrow for the Roots of Fruit Trees, as will be ſhewn in its proper Place.

The Height of Garden Walls ſhould be 12 Feet, which is a moderate Proportion; and if the Soil is good, it may in Time be well furniſhed with bearing Wood in every Part, eſpecially that Part planted with Pears, notwithſtanding the Branches being trained horizontally from the Bottom of the Walls.

I would recommend the White Thorn, Holly, Black Thorn, and Crab, for outward Fences to good Ground, but I do not approve of intermixing them.

The White Thorn is the beſt Quick to plant, becauſe it is the moſt common, and may be clipped ſo as to render it the cloſeſt and hardieſt Fence of any other Tree; and being very durable, is preferred to all others for outward Fences, or for the Diviſion of Fields, where they are expoſed to Cattle, *&c.*

The Black Thorn and Crab make very good Fences, and are to be raiſed as the White Thorn; but if the Kernels of Apples or Crabs be ſown, it is beſt to ſow the Pommace with them, and they will come up the ſooner, *i. e.* the firſt Year.

If Crab Stocks be planted while young, in the ſame Manner as Quick, they make excellent Hedges, and ſo will ſome Sorts of Plums.

The Black Thorn is not accounted ſo good for Fences as the White Thorn, becauſe it is apt to run more into the Ground, and is not certain as to growing, eſpecially if the Plants are not ſet very young; but on the other Hand, the Buſhes are by much the better, and are more laſting than the White, or any other, for dead Hedges, or to mend Gaps; nor are they ſubject to be cropt by Cattle. The richer the Mould is, the better they will proſper, yet they will grow on the ſame Sort of Soil that the White Thorn does.

The Holly makes an excellent Fence, and is preferable to all the reſt; it is ſlow in Growth at the firſt, but when once it does grow, it makes Amends by its Height, Strength, and Thickneſs.

It is raiſed of Sets or Berries, as the White Thorn is, and will lie as long in the Ground before it comes up. It delights moſt in ſtrong Grounds, but will grow upon the drieſt Gravel, amongſt Rocks and Stones.

The Berries lie till the ſecond Spring before they come, therefore they ſhould be prepared before they are ſown (for this ſee the Article *Aquifolium*). It will be beſt to ſow them in the Place where you deſign they ſhould grow, and they ſhould be well weeded both before they come up, and afterwards.

French Furs will alſo do well upon dry ſandy Banks, where few other Plants will grow; but they muſt be kept very clean at the Bottom, and cut thin, and never ſuffered to grow too high: Nor ſhould they be cut in dry Weather, nor late in Autumn, nor early in the Spring; the doing either is apt to make it die in Patches, which is irrecoverable; nor will it ever break out again from old Wood, if cut cloſe in, after it has been ſuffered long to grow out.

Fences may likewiſe be made of Elder: If the Soil be good, you may put Sticks of Elder, or Truncheons ten or twelve Feet long, ſlopeways in your Banks, ſo as to make Chequer Work; and they will make a Fence for a Garden the quickeſt of any Thing, and be a good Shelter. But theſe Fences are improper for a fine Garden, becauſe they ſhoot very irregular, and are ungovernable; as likewiſe the Roots of theſe Trees ſpread very far, and draw away all the Heart of the Ground, ſo as to ſtarve whatever Plants grow near them: Add to this, the ſcattering of the Berries, which will fill the Ground near them with young Plants; which, if not timely weeded out, will get the better of whatever grows near them; therefore this Sort of Fence is ſeldom planted, where a Hedge of White Thorn can be had.

Elder planted on a Bank, the Side of which is waſhed with a River or Stream, will make an extraordinary Fence, and will preſerve the Bank from being undermined by the Water, becauſe it is continually ſending Suckers from the lower Roots, which is of great Advantage where the Stream waſhes away the Bank.

For middle Fences in a Garden, the Yew is the moſt tonſile, governable, and durable Plant.

For ſurrounding Wilderneſs Quarters, Elm, Lime, Hornbeam, and Beech, are very proper.

FENNEL. *See* Fœniculum.

FENNEL-FLOWER. *See* Nigella.

FERRARIA. *Burm.*

The *Characters* are,

The Flower is incloſed in a double Spatha, or Sheath, which is membranaceous and placed alternate; out of each Sheath is produced one Flower. The inner Sheath is ſhorter and oblique to the outer, which is longer and erect. The Flower has 6 oblong acute-pointed Petals, 3 of which are alternately larger than the other; the 3 ſmaller are raiſed and ſwelling in the Middle; their under Part is ſmooth and lucid; theſe ſeem to be joined at their Tails, and their Borders are fringed, turned backward, and ſilky; it has 3 Stamina which riſe above the Petals, and are crowned by roundiſh Twin Summits, and a roundiſh three-cornered Germen ſituated under the Flower, ſuporting a ſingle erect Style, crowned by a trifid Stigma which is hairy, and whoſe ſingle Parts end in Threads. The Germen turns to an oblong ſmooth Capſule, preſſed together below, but bellied above and 3 cornered, one Part being convex, and is crowned by the decayed Petals of the Flower; it has 3 Cells, and is wrapped in the permanent Sheath of the Flower; in each Cell is lodged many ſmall round Seeds, faſtened to the 3 cornered Column in the Center.

The *Species* are,

1. Ferraria *foliis lanceolatis. Burm.* Ferraria with Spear-ſhaped Leaves. This is the *Flos Indicus è violaceo fuſcus, radicè tuberoſa. Ferr. Flor. Cult. Indian* Flower of a tawny Violet Colour with a tube-roſe Root.

2. Ferraria *foliis enſiformibus. Burm.* Ferraria with Sword-ſhaped Leaves.

Theſe Plants grow naturally at the *Cape of Good Hope.* The Root of the firſt Sort was ſent me by Dr. *Job Baſter*, of *Zirkzee*, who received it from the *Cape of Good Hope.* The Root is tuberous, roundiſh, and compreſſed, it is ſhaped like the Root of *Indian* Corn Flag, but is larger; in the Center of the upper Side of the Root there is a Hollow like a Navel, from whence the Flower Stalk comes out. The outer Cover is of a light brown Colour, and the Inſide is white. The Stalk riſes a Foot and a Half high, is round, as thick as a Man's little Finger, and is garniſhed with Leaves the whole Length, which are placed alternate, embrace the Stalks with their Baſe, and point upward. The lower Leaves are from 4 to 5 Inches long, and an Inch and a Half broad toward the Baſe ending in obtuſe Points; they are ſmooth, a little Keel-ſhaped, and of a light green Colour. The upper Part of the Stalk divides into 2 or 3 Branches, cloſely garniſhed with Leaves of the ſame Shape with thoſe below, but much ſhorter; each of the Branches is terminated by a Spatha or Sheath, which is at firſt of the ſame Colour with the Leaves, but when the Flower fades, this withers and dies, but remains upon the Stalk; theſe Sheaths are double, one within the other. The Flower riſes out of the Top on a very ſhort Foot Stalk; it has 6 oblong Petals, 3 of which are alternately larger than the other; they are finely fringed on their Edges, opening flat, and are reflexed at their Points; they are of a whitiſh green on their Outſide, but of a tawny Violet within, having many ſilky Hairs on their Surface. In the Center of the Flower is ſituated an erect Style, which ſits upon the Germen, and is crowned with 3 bifid Stigmas, which terminate in Hairs. On one Side the Style is ſituated 3 Stamina, which divide toward the Top, and are terminated by roundiſh Twin Summits. The Germen which is ſituated under the Flower, becomes an oblong ſmooth Capſule with 3 Cells, filled with roundiſh Seeds. It flowers in *April*, but the Seeds do not ripen here.

There is a great Singularity in the Root of this Plant, which is, that it vegetates but every other Year, and ſometimes every third Year, the intermediate Time it remains unactive, though very ſound and good.

The 2d Sort is figured by Dr. *Burman*; but I have not ſeen it in *England*; it differs from the former in having longer Leaves, which are Sword-ſhaped and furrowed, like thoſe of *Byzantine* Corn Flag. The Stalk riſes about the ſame Height, but does not divide ſo much; the Flowers are ſmaller, and the Petals not ſo much fringed.

Theſe Plants are propagated by Seeds, when they can be procured from the Country where they naturally grow; theſe ſhould be ſown in Pots as ſoon as they arrive, and require the ſame Treatment as the *Ixia*. The Roots alſo ſend out Offſets, but ſparingly in *England*; and theſe are ſome Years before they arrive to a Size for flowering, which occaſions the Scarcity of theſe Plants in *Europe*. The Roots alſo require the ſame Culture with the *Ixia* and *Watſonia*, for they are too tender to live through the Winter in the open Air here; theſe muſt be planted in Pots filled with light loamy Earth, and ſheltered under a Frame in Winter, as hath been before directed for *Watſonia* and *Ixia*, under which Articles the Reader will find proper Directions for their Culture; but thoſe Years when the Roots do not vegetate, they ſhould have very little Water, and in Summer the Pots ſhould be placed where they may have only the Morning Sun, for if they are expoſed to the Mid-day Sun, the Earth will dry too much, ſo may require Water often, which frequently rots the Roots when they are in an inactive State.

The Mice are very fond of theſe Roots, and will deſtroy them if not protected from thoſe Vermin.

FERRUM EQUINUM. *See* Hippocrepis.

FERULA. *Lin. Gen. Plant.* 305. *Tourn. Inſt. R. H.* 321. *Tab.* 170. Fennel Giant; in *French*, *Ferule*.

The *Characters* are,

It hath an umbellated Flower; the principal Umbel is globular, and compoſed of ſeveral ſmaller called Rays, of the ſame Form; the Involucrum is compoſed of ſeveral narrow Leaves, which fall off; the principal Umbel is uniform. The Flowers have 5 *oblong erect Petals which are equal, and* 5 *Stamina of the ſame Length, terminated by ſingle Summits; under the Flower is ſituated a turbinated Germen, ſupporting* 2 *reflexed Styles, crowned by obtuſe Stigmas. The Germen afterward becomes an elliptical compreſſed plain Fruit, dividing in two Parts, each having a large elliptical plain Seed, marked with* 3 *Lines on each Side.*

The *Species* are,

1. FERULA *foliolis linearibus longiſſimis ſimplicibus. Hort. Cliff.* 95. *Ferula* with the ſmaller Leaves very narrow, long, and ſingle. This is the *Ferula major, ſeu fœmina Plinii. M. Umb. Pliny*'s Female Fennel Giant.

2. FERULA *foliolis multipartitis, laciniis linearibus planis. Hort. Cliff.* 95. *Ferula* whoſe ſmaller Leaves are divided into many narrow Parts which are plain. This is the *Ferula galbanifera. Lob. Obſ.* Galbanum-bearing Fennel Giant.

3. FERULA *foliolis laciniatis, lacinulis tridentatis inæqualibus. Hort. Cliff.* 95. *Ferula* whoſe ſmaller Leaves are cut, and Segments ending in three unqual Parts. This is the *Ferula Tingitana, folio latiſſimo lucido. H. Edin.* Broad-leaved ſhining Fennel Giant from *Tangier*.

4. FERULA *foliis pinnatifidis, pinnis linearibus planis trifidis. H. C.* 95. *Ferula* with Wing-pointed Leaves, whoſe Pinnæ are narrow, plain, and trifid. *Ferula latiore folio. Mor. Hiſt.* Fennel Giant with a broader Leaf.

5. FERULA *foliorum pinnis baſi nudis, foliolis ſetaceis. H. C.* 95. *Ferula* with the Wings of the Leaves naked at the Baſe, and the ſmaller Leaves briſtly. *Ferula Orientalis, Cachryos folio & facie. Tourn.* Eaſtern Fennel Giant, with the Leaf and Appearance of *Cachrys*.

6. FERULA *foliorum pinnis utrinque baſi acutis, foliolis ſetaceis. H. C.* 95. *Ferula* with the Wings of the Leaves pointed at their Baſe on every Side. This is the *Laſerpitium Orientale Mei folio, flore luteo. Tourn.* Eaſtern Laſerwort with a Spignel Leaf and yellow Flower.

7. FERULA *foliolis appendiculatis, umbellis ſubſeſſilibus. Lin. Sp. Plant.* 247. *Ferula* with Appendages to the ſmaller Leaves, and Umbels ſitting cloſe to the Stalks. This is the *Libanotis ferulæ folio & ſemine. C. B. P.* 158. *Libanotis* with a Fennel Giant Leaf and Seed.

8. FERULA *foliis pinnatifidis, pinnis linearibus planis brevioribus. Ferula* with Wing-pointed Leaves, whoſe innæ are narrow, plain, and ſhort. *Ferula tenuiore folio Tourn. Inſt.* Fennel Giant with a narrower Leaf.

The 1ſt of theſe Plants is common in the *Engliſh* Gardens: This, if planted in a good Soil, will grow to the Height of 10 or 12 Feet and divides into many Branches: The lower Leaves of this Sort ſpread more than 2 Feet every Way; theſe branch out into many Diviſions, which are again ſubdivided into many ſmaller, and are garniſhed with very long narrow ſmall Leaves that are ſingle; they are of a lucid green, and ſpread near the Ground. From the Center of the Plant comes out the Flower Stalk, which, when the Plants are ſtrong, will be near as large as a common Broomſtick, and will riſe 10 or 12 Feet, having many Joints; if the Stalks are cut, there iſſues from the Veſſels a fœtid yellowiſh Liquor, which will concrete on the Surface of the Wound. The Stalks are terminated by large Umbels of yellow Flowers, which come out the latter End of *June*, or Beginning of *July*; theſe are ſucceeded by oval compreſſed Seeds, which have 3 Lines running longitudinally on each Side. Theſe ripen in *September*, and the Stalks decay ſoon after. When the Stalks are dry, they are full of a light dry Pith, which will ſoon take Fire.

Mr. *Ray* ſays, the People of *Sicily* uſe the Pith of this Plant for Tinder to light their Fires; if this was practiſed by the Ancients, we may eaſily gueſs why the Poets feigned, that *Prometheus* ſtole Fire from Heaven, and carried it to the Earth in a hollow *Ferula*.

The Leaves decay ſoon after the Seeds are formed, ſo that before they are ripe, there are ſeldom any Leaves remaining, and the Stalks afterward dry and become very tough; ſo it is not unlikely theſe may have been uſed for Correction in the Schools, as they are very light, and cannot do much Injury. The Roots of this Sort will continue ſeveral Years, eſpecially on a dry Soil, and will annually produce Flowers and Seeds.

The 2d Sort doth not grow quite ſo large as the firſt, but the Stalks of this will riſe 7 or 8 Feet high; the lower Leaves are large, and greatly divided; the ſmall Leaves are flat, not ſo long as thoſe of the former, and are of a lucid green Colour; the Umbels of Flowers are ſmaller, and the Seeds are leſs. This flowers and ripens its Seeds about the ſame Time as the former Sort.

The 3d Sort hath large ſpreading Leaves near the Root, which are divided and ſubdivided into many Parts; the ſmall Leaves are much broader than in any of the other Sorts, and theſe are divided at their End into 3 unequal Segments; theſe Leaves are of a very lucid green; the Stalks are ſtrong, riſe to the Height of 8 or 10 Feet, and are terminated by large Umbels of yellow Flowers, which are ſucceeded by large oval compreſſed Seeds like thoſe of the firſt Sort. This flowers and ripens its Seeds about the ſame Time as the former Sort, it grows naturally in *Spain* and *Barbary*.

The 4th Sort grows much the ſame Height as the 2d; the Leaves of this branch out on every Side pretty wide, and the ſmaller Leaves on the Diviſions of the Leaves, are broader than thoſe of the others (excepting the 3d), but they are longer than thoſe, and of a darker green Colour, ending in 3 Points. The Umbels of Flowers are large, the Flowers yellow, and are ſucceeded by oval compreſſed Seeds, like thoſe of the other Species. This grows naturally in *Sicily*.

The 5th Sort is of much humbler Growth; the Stalks ſeldom riſe more than 3 Feet high; the lower Leaves branch into many Diviſions, which are cloſely garniſhed with very fine briſtly Leaves; the Umbel of Flowers is but ſmall, compared with the others, and the Seeds are ſmaller. It grows naturally in the *Levant*.

The 6th Sort hath very branching Leaves, the Foot Stalks are angular and channelled; this ſends out at every Joint 2 Side Branches oppoſite; thoſe toward the Bottom are 9 or 10 Inches long, and the others diminiſh gradually to the Top; theſe Side Branches ſend out ſmaller at each Joint in the ſame Manner, and are garniſhed with very fine Leaves like thoſe of Spignel, which ſtand quite round the Stalks in Shape of Whorls; the Flower Stalks grow 3 Feet high, having a pretty large Umbel of yellow Flowers at Top; theſe are ſucceeded by oval flat Seeds, which ripen in the Autumn. It grows naturally in the *Levant.*

The 7th Sort riſes about 3 Feet high; the Leaves are much divided, and the ſmall Leaves on the Diviſions are very narrow and entire; the Umbels of Flowers are ſmall, and are ſituated cloſe to the Stalks between the Leaves at the Joints; they are like thoſe of the other Sorts. It grows naturally in *Iſtria* and *Carniola.*

The 8th Sort is like the 2d, but the ſmall Leaves are much broader; the large Leaves not ſo long, and the Stalk grows taller, but in other Reſpects agrees with that. It grows naturally in *Spain.*

All theſe Sorts have perennial Roots, which continue ſeveral Years; theſe have thick ſtrong Fibres, which run deep in the Ground, and divide into many ſmaller, ſpreading to a Diſtance every Way: The Stalks are annual, and decay ſoon after they have perfected Seeds. As theſe Plants ſpread very wide, they ſhould have each 4 or 5 Feet Room; nor ſhould they ſtand near other Plants, for their Roots will rob them of their Nouriſhment.

They are all propagated by Seeds, which ſhould be ſown in Autumn; for if they are kept out of the Ground till Spring, they frequently fail, and thoſe which ſucceed remain a Year in the Ground, ſo much Time is loſt. The Seeds may be ſown in Drills, by which Method the Ground may be eaſier kept clean; they muſt not be nearer than a Foot Row from Row, and the Seeds may be ſcattered 2 or 3 Inches aſunder in the Drills; when the Plants come up, they muſt be kept clean from Weeds; and if they ſhould be too cloſe together, they ſhould be thinned, to allow them room to grow, for they will not be ſtrong enough to remove till they have had 2 Years Growth; in Autumn ſo ſoon as their Leaves decay, the Roots ſhould be taken up with great Care, ſo as not to cut or injure the Tap or downright Root, and then planted where they are deſigned to remain, for after this tranſplanting they ſhould not be removed. They delight in a ſoft, gentle, loamy Soil, not too wet, and are rarely injured by the hardeſt Froſt.

FICOIDES. *See* Meſembryanthemum.

FICUS. *Lin. Gen. Plant.* 1032. *Tourn. Inſt. R. H.* 662. *Tab.* 420. The Fig Tree; in *French, Figuier.*

The *Characters* are,

It hath male and female Flowers, which are included within the Covering, or Skin of the Fruit, ſo do not appear unleſs the Covering is opened; the male Flowers are but few in Number, and are ſituated in the upper Part of the Fruit; the female Flowers are numerous, and ſituated in the lower Part. The male Flowers ſit each upon a ſeparate Foot Stalk, and have an Empalement divided into 3 *Parts; they have no Petals, but* 3 *briſtly Stamina as long as the Empalement, terminated by twin Summits; the female Flowers ſit upon diſtinct Foot Stalks; their Empalements are divided into* 5 *Parts; they have no Petals, but a Germen as the Empalement, ſupporting an inflexed Style, crowned by two reflexed pointed Stigmas. The Germen afterward becomes a large Seed, ſitting in the Empalement.*

The *Species* are,

1. FICUS *foliis palmatis. Hort. Cliff.* 471. Fig Tree with Hand-ſhaped Leaves. This is the *Ficus communis C. B. P.* 457. The common Fig Tree.

2. FICUS *foliis cordatis ſubrotundis integerrimis. Hort. Cliff.* 471. Fig Tree with roundiſh Heart-ſhaped Leaves, which are entire. This is the *Ficus folio mori, fructum in caudice ferens. C. B. P.* 459. Fig Tree with a Mulberry Leaf, bearing Fruit on the Body or Stem, commonly called Sycamore.

3. FICUS *foliis cordatis integerrimis acuminatis. Hort. Cliff.* 471. Fig Tree with entire Heart-ſhaped Leaves, ending in acute Points. This is the *Ficus Malabarienſis, folio cuſpidato, fructu rotundo parvo gemino. Pluk. Alm.* 144. *Malabar* Fig with a long pointed Leaf, and ſmall double round Fruit.

4. FICUS *foliis ovatis integerrimis obtuſis, caule infernè radicato. Hort. Cliff.* 471. Fig Tree with oval, obtuſe, entire Leaves, and the lower Part of the Stalk putting out Roots. This is the *Ficus Benghalenſis, folio ſubrotundo, fructu orbiculato. Hort. Amſt.* 1. p. 119. *Bengal* Fig with a roundiſh Leaf and orbicular Fruit.

5. FICUS *foliis lanceolatis petiolatis, pedunculis aggregatis, ramis radicantibus. Lin. Sp. Pl.* 1060. Fig Tree with Spear-ſhaped Leaves having Petals, the Foot Stalks of the Fruit growing in Cluſters, and Branches ſending out Roots. This is the *Ficus Indica Theophraſti. Tabern. Hiſt.* 1370. *Indian* Fig of *Theophraſtus.*

6. FICUS *foliis lanceolatis integerrimis. Hort. Cliff.* 471. Fig Tree with entire Spear-ſhaped Leaves. This is the *Ficus Indica maxima, folio oblongo, funiculis è ſummis ramis dimiſſis radices agentibus ſe propagans, fructu minori ſphærico ſanguineo. Sloan. Cat. Jam.* 189. The largeſt *Indian* Fig with an oblong Leaf, ſending out Roots from the Tops of the Branches, and a ſmall ſpherical Blood-coloured Fruit.

7. FICUS *foliis ovatis acutis integerrimis, caule arboreo, fructu racemoſo. Lin. Sp. Pl.* 1060. Fig Tree with oval, entire, acute Leaves, a Tree-like Stalk, and branching Fruit. This is the *Alty-alu. Hort. Mal.*

8. FICUS *foliis ovatis acutis integerrimis, caule repente Lin. Sp. Pl.* 1060. *Amœn. Acad.* Fig Tree with oval, acute, entire Leaves, and a creeping Stalk. This is the *Ficus ſylveſtris procumbens, folio ſimplici. Kæmpf. Amœn.* 803. Trailing wild Fig Tree having ſingle Leaves.

9. FICUS *foliis ovato cordatis integerrimis glabris.* Fig Tree with oval, Heart-ſhaped, entire, ſmooth Leaves, vulgarly called *Ficus nymphææ folio.* Fig Tree with a Water Lily Leaf.

10. FICUS *foliis oblongo-cordatis acuminatis, petiolis longiſſimis.* Fig Tree with oblong, Heart-ſhaped, pointed Leaves, and very long Foot Stalks. This is the *Ficus citrii folio, fructu parvo purpureo. Cateſb. Hiſt. Carol.* Fig Tree with a Citron Leaf, and ſmall purple Fruit.

11. FICUS *foliis ovatis integerrimis obtuſis, oppoſitis, fructu globoſo calyculato.* Fig Tree with oval, obtuſe, entire Leaves placed oppoſite, and a globular Fruit having a Calyx. This is the *Ficus folio lato ſubrotundo, fructu globoſo, magnitudine nucis moſchatæ. Houſt. Mſſ.* Fig Tree with broad roundiſh Leaves, and a globular Fruit about the Bigneſs of a Nutmeg.

The 1ſt Sort, which is the Fig, whoſe Fruit is valuable, is cultivated in moſt Parts of *Europe*; of this there are great Varieties in the warm Countries, which have been obtained from Seeds, therefore may be increaſed annually, if the Inhabitants were careful in propagating the Trees, from the Seeds of their beſt Sorts. In *England* we had not more than four or five Sorts till within a few Years paſt, for as the Generality of the *Engliſh* were not Lovers of this Fruit, ſo there were few who troubled themſelves with the Culture of it. But ſome Years paſt I had a large Collection of theſe Trees ſent me from *Venice*, by my honoured Friend the Chevalier *Rathgeb*, which I planted and preſerved to taſte of their Fruits, ſeveral of which proved excellent; theſe I have preſerved and propagated, and thoſe whoſe Fruit were inferior, have been neglected. As the Variety of them is very great, I ſhall here mention only ſuch of them as are the beſt worth cultivating, placing them in the Order of their ripening.

1. The Brown or Cheſtnut-coloured *Iſchia* Fig. This is the largeſt Fruit of any I have yet ſeen, it is ſhort, globular, with a pretty large Eye, pinched in near the Foot Stalk, of a brown or Cheſtnut Colour on the Outſide, and purple within; the Grains are large, and the Pulp ſweet and high flavoured; this Sort very often burſts open when it ripens. It ripens the latter End of *July*, or the Beginning of *Auguſt*. I have had this Fruit ripen well on Standards, in a warm Soil. If this Sort is planted againſt hot Walls, two plentiful Crops of Fruit may be annually ripened.

2. The Black *Genoa* Fig. This is a long Fruit, which ſwels pretty large at the Top where it is obtuſe, but the lower Part is very ſlender toward the Stalk; the Skin is of a dark purple Colour, almoſt black, and hath a purple Farina over it like that on ſome Plums; the Inſide is of a bright red, and the Fleſh is very high flavoured. It ripens early in *Auguſt*.

3. The ſmall White early Fig. This hath a roundiſh Fruit a little flatted at the Crown, with a very ſhort Foot Stalk; the Skin, when fully ripe, is of a pale yellowiſh white Colour; the Skin is thin, the Inſide white, and the Fleſh ſweet, but not high flavoured. This ripens in *Auguſt*.

4. The large white *Genoa* Fig. This is a large globular Fruit, a little lengthened toward the Stalk; the Skin is thin, of a yellowiſh Colour when fully ripe, and red within. This is a good Fruit, but the Trees are not good Bearers.

5. The Black *Iſchia* Fig. This is a ſhort Fruit, of a middling Size, a little flatted at the Crown; the Skin is almoſt black when ripe, and the Inſide is of a deep red, the Fleſh is very high flavoured, and the Trees produce a good Crop of Fruit, but the Birds are great Devourers of them, if they are not protected from them. This ripens in *Auguſt*.

6. The *Malta* Fig. This is a ſmall brown Fruit, much compreſſed at the Top, and greatly pinched toward the Foot Stalk; the Skin is of a pale brown Colour, as is alſo the Inſide, the Fleſh is very ſweet, and well flavoured. If this Sort is permitted to hang upon the Trees till the Fruit is ſhriveled, it becomes a fine Sweetmeat.

7. The Murrey, or Brown *Naples* Fig. This is a pretty large globular Fruit, of a light brown Colour on the Outſide, with ſome faint Marks of a dirty white, the Inſide is nearly of the ſame Colour, the Grains are pretty large, and the Fleſh is well flavoured. It ripens the latter End of *Auguſt*.

8. The Green *Iſchia* Fig. This is an oblong Fruit, almoſt globular at the Crown; the Skin is thin, of a green Colour, but when it is fully ripe, it is ſtained through by the Pulp to a browniſh Caſt; the Inſide is purple, and will ſtain Linen, or Paper; the Fleſh is high flavoured, eſpecially in warm Seaſons. It ripens toward the End of *Auguſt*.

9. The *Madonna* Fig, commonly called here the *Brunſwick*, or *Hanover* Fig, is a long pyramidal Fruit of a large Size; the Skin is brown; the Fleſh is of a lighter brown Colour, coarſe, and hath little Flavour. This ripens the End of *Auguſt* and the Beginning of *September*; the Leaves of this Sort are much more divided than of moſt other.

10. The common Blue, or Purple Fig, is ſo well known, as to need no Deſcription.

11. The long brown *Naples* Fig. The Leaves of this Tree are deeply divided. The Fruit is long, ſomewhat compreſſed at the Crown. The Foot Stalks are pretty long; the Skin of a dark brown when fully ripe, the Fleſh inclining to red; the Grains are large, and the Fleſh well flavoured. It ripens in *September*.

12. The Yellow *Iſchia* Fig. This is a large Fruit, of of a pyramidal Form; the Skin is yellow when ripe, and the Fleſh is purple and well flavoured, but the Trees do not produce much Fruit here; they grow very luxuriant in Branches, the Leaves are very large, and not much divided. This ripens in *September*.

13. The ſmall Brown *Iſchia* Fig. This is a ſmall pyramidal Fruit with a ſhort Foot Stalk; the Skin is of a light brown, the Fleſh inclining to purple, of a very high Flavour; it ripens late in *September*; the Leaves of this Tree are leſs divided than any of the other Sorts. This is not a good Bearer.

14. The *Gentile* Fig. This is a middle ſized globular Fruit; the Skin, when ripe, is yellow, the Fleſh alſo inclines to the ſame Colour; the Grains are large, and the Fleſh well flavoured, but it ripens very late, and the Trees are bad Bearers, ſo that it is not propagated much in *England*.

There are ſeveral other Sorts which have been lately introduced from *Italy*, but all which I have yet taſted, are inferior to thoſe above-mentioned; ſome of them rarely ripen their Fruit, and others are very ill Bearers, ſo not worth propagating, therefore I have omitted mentioning them here; for as thoſe which are enumerated, continue in Succeſſion during the Seaſon for theſe Fruits, and being preferable to the other, few Perſons will care to fill their Gardens with a greater Variety of theſe Trees, than are of real Uſe, eſpecially as they require good Walls, and much Room.

The 1ſt, 2d, 3d, 9th, and 10th Sorts, will ripen their Fruits on Standards, in a warm Situation; but the others require the Aſſiſtance of Walls expoſed to good Aſpects, otherwiſe their Fruit will not ripen in *England*.

Fig Trees generally thrive in all Soils, and in every Situation, but they produce a greater Quantity of Fruit on a ſtrong loamy Soil, than on dry Ground; for if the Seaſon proves dry in *May* and *June*, thoſe Trees which grow upon very warm dry Ground, are ſubject to caſt their Fruit; whenever this happens, ſuch Trees ſhould be well watered and mulched, which will prevent the Fruit from dropping; and the Fruit on theſe Trees are better flavoured than any of thoſe which grow on cold moiſt Land. I have always obſerved thoſe Fig Trees to bear the greateſt Quantity of well-flavoured Fruit, which were growing upon chalky Land, where there has been a Foot or more of a gentle loamy Soil on the Top. They alſo love a free open Air, for although they will ſhoot and thrive very well in cloſe Places, yet they ſeldom produce any Fruit in ſuch Situations; and all thoſe which are planted in ſmall Gardens in *London*, will be well furniſhed with Leaves, but I never ſeen any Fruit upon them, which have grown to Maturity.

Theſe Trees are planted as Standards, in all warm Countries, but in *England* they are generally planted againſt Walls, there being but few Standard Fig Trees, at preſent, in the *Engliſh* Gardens; however, ſince ſome of the Sorts are found to ripen their Fruit well upon the Standards, and the Crop of Figs is often greater upon them, than upon thoſe Trees againſt Walls, it is worthy of our Care, to plant them either in Standards or Eſpaliers; the latter, I think, will ſucceed beſt in *England*, if they were managed as in *Germany*, where they untie the Fig-Trees from the Eſpalier, and lay them down, covering them in Winter with Straw or Litter, which prevents their Shoots being injured by the Froſt; and this Covering is taken away gradually in the Spring, and not wholly removed until all the Danger of Froſt is over, by which Management they generally have a very great Crop of Figs, whereas in *England*, where the Trees grow againſt warm Walls, if the Spring proves warm, the young Figs are puſhed out early, and the Cold, which frequently returns in *April* and *May*, cauſes the greateſt Part of the Fruit to drop off; ſo that our Crop of Figs is generally more uncertain than moſt other Sorts of Fruit; and it frequently happens, that Trees planted againſt North and Eaſt aſpected Walls, produce a greater Quantity of Fruit in *England*, than thoſe which are planted againſt South and South Eaſt Aſpects; which muſt happen from the latter putting out their Fruit ſo much earlier in Spring; and if there happen cold froſty Nights, after the Figs are come out, the forwardeſt of the Figs are generally ſo injured as to drop off from the Trees ſoon after. In *Italy*, and the other warm Countries, this firſt Crop of Figs is little regarded, being few in Number; for it is the 2d Crop which are produced from the Shoots of the ſame Year, which is their principal Crop, but theſe rarely ripen in *England*, nor are there above 3 or 4 Sorts which ever ripen their 2d Crop, let the Summer prove ever ſo good, therefore it is the firſt Crop which we muſt attend to in *England*; ſo that when theſe Trees are growing againſt the beſt aſpected Walls, it will be a good Method to looſen them from the Wall in Autumn; and after having diveſted the Branches of all the latter Fruit, to lay the Branches down from the Wall, faſtening them together in ſmall Bundles, ſo that they may be tied to Stakes, to keep them from lying upon the Ground, the Damp whereof, when covered in froſty Weather, might cauſe them to grow mouldy, and hereby they will be ſecured from being broken by the Wind. When they are thus managed in Autumn, if the Winter ſhould prove very ſevere, the Branches may be eaſily covered with Peas Haulm, Straw, or any other light Covering, which will guard the tender Fruit bearing Branches from the Injury of Froſt; and when the Weather is mild, the Covering muſt be removed, otherwiſe the Figs will come out too early, for the Intention of this Management is, to keep them as backward as poſſible; then in the Spring, when the Figs are beginning to puſh out, the Trees may be faſtened up to the Wall again. By this Management I have ſeen very great Crops of Figs produced in two or three Places.

I have alſo ſeen great Crops of Figs in ſome particular Gardens, after very ſharp Winters, when they have, in general, failed in other Places, by covering up the Trees with Reeds made into Pannels, and fixed up againſt the Walls.

In the Pruning of Fig Trees, the Branches muſt never be ſhortened, becauſe the Fruit are all produced at the upper Part of the Shoots of the former Year, ſo, if theſe are cut off, there can be no Fruit expected, beſide, the Branches are very apt to die after the Knife; ſo that when the Branches are too cloſe together, the beſt Way is to cut out all the naked Branches quite to the Bottom, leaving thoſe which are beſt furniſhed with lateral Branches at a proper Diſtance from each other, which ſhould not be nearer than a Foot; and when they are well furniſhed with lateral Branches, if they are laid 4 or 5 Inches farther aſunder, it will be better.

The beſt Seaſon for pruning Fig Trees is in Autumn, becauſe at that Time the Branches are not ſo full of Sap, ſo they will not bleed ſo much, as when they are pruned in Spring; at this Seaſon, the Branches ſhould be diveſted of all the autumnal Figs, and the ſooner this is is done, when the Leaves begin to fall off, the better will the young Shoots reſiſt the Cold of the Winter. There are ſome Seaſons ſo cold and moiſt, that the young Shoots of the Fig Trees will not harden, but are ſoft, and full of Juice; when this happens, there is little Hope of a Crop of Figs the ſucceeding Year, for the firſt Froſt in Autumn will kill the upper Part of theſe Shoots, for a conſiderable Length downward; whenever this happens, it is the beſt Way to cut off all the decayed Part of the Shoots, which will prevent the Infection from deſtroying all the lower Part of the Branches; by this Method, I have ſeen a moderate Crop of Figs put out from the lower Part of the Shoots, where, if the Shoots had not been injured, there would have been no Fruit produced, becauſe it is chiefly from the 4 or 5 uppermoſt Joints of the Shoots, that the Fruit comes out; and it is for this Reaſon, that as many of the ſhort lateral Branches ſhould be preſerved as poſſible, thoſe being the moſt productive of Fruit; for where the long ſtrait Shoots are faſtened up, there will be no Fruit, but at their Extremities, ſo that all the lower Part of the Trees will be naked, if there is not a particular Regard had to ſupply young Shoots in every Part of the Trees.

Thoſe Trees which are laid down from the Eſpaliers, ſhould not be faſtened up again till the End of *March*, for the Reaſons before given, and thoſe againſt Walls may remain ſome Time longer; when the large Shoots of theſe are nailed up, if the ſmall lateral Branches are thruſt behind theſe, to keep them cloſe to the Wall, it will ſecure the young Figs from being injured by the Morning Froſts, and when this Danger is over, they may be brought forward to their natural Poſition again; during the Summer Seaſon theſe Trees will require no other pruning, but to ſtop the Shoots in Spring, where lateral Branches are wanting, and as the Branches are often blown down by Wind, they ſhould be immediately faſtened up again, otherwiſe they will be in Danger of breaking, for the Leaves of theſe Trees being very large and ſtiff, the Wind has great Power on them, and where the Branches are not well ſecured, they are frequently torn down.

Thoſe Trees which are planted againſt Eſpaliers may be protected from the Injury of Froſt in the Spring, by placing Reeds on each Side the Eſpalier, which may be taken down every Day, and put up again at Night; but this need not be practiſed in warm Weather, but only at ſuch Times as there are cold Winds, and froſty Mornings; and although there is ſome Trouble and Expence attending this Management, yet the plentiful Crop of Figs, which may be this way obtained, will ſufficiently recompenſe for both; the beſt Way of making this Covering is to faſten the Reeds with Rope Yarn, in ſuch a Manner, as that it may be rolled up like a Mat, ſo that the Whole may with great Facility be put up, or taken down; and if theſe Reeds are carefully rolled up, after the Seaſon for uſing them is over, and put up in a dry Shed, they will laſt ſeveral Years.

There are ſeveral Perſons who of late have planted Fig Trees in Standards, which have ſucceeded very well; this Practice was revived, by obſerving ſome old Standard Fig Trees in ſome Gardens, which had been growing many Years, and generally produced a much greater Plenty of Fruit than any of thoſe Trees which were growing againſt warm Walls; indeed, theſe Standard Fig Trees are in much greater Danger of having their Branches killed by ſevere Froſt, but in mild Winters they generally do better than thoſe againſt Walls, ſo that where theſe Trees can be covered in very hard Winters, there will always be Plenty of Fruit, and theſe may be covered by faſtening as many of the Branches together as can be conveniently brought into a Bundle, and winding ſome Haybands, Straw, Peas Haulm, or any ſuch light Covering as can be readily procured, which in the Spring may be gradually taken off, ſo as not to expoſe the Shoots all at once to the open Air, and if there is ſome ſuch light Covering laid round the Stems, and upon the Surface of the Ground about their Roots, it will more effectually ſecure them from the Danger of Froſt, but when this is practiſed, great Care ſhould be taken that no Mice or Rats harbour in this Covering, for theſe will eat off the Bark from their Shoots, and kill them; and I have often obſerved thoſe Trees which were againſt Walls, have ſuffered greatly from theſe Vermin, by having many of their largeſt Branches diſbarked near the Ground, which has abſolutely killed them; and it is in the Winter that theſe Vermin do this Miſchief to them, therefore they ſhould be carefully watched at that Seaſon,

The common blue and white Figs, which are the Sorts moſt generally cultivated in *England*, are not ſo proper to plant for Standards, as ſome others which have been lately introduced; for they are much tenderer, and are often killed almoſt to the Root, when ſome of the other Sorts, which have been growing in the ſame Situation, have received very little Injury from the Froſt; indeed the white Sort is generally a great Bearer, and the Fruit is very ſweet, but to thoſe Palates which are accuſtomed to Figs, that Sort is not much in Eſteem, from its Want of Flavour; thoſe which have ſucceeded beſt with me, are the firſt and third Sorts. Their Branches are rarely hurt by Froſt in Winter, and their Fruit will always ripen well, for in favourable Seaſons, many of theſe Sorts, which were growing againſt Walls, have ripened their ſecond Crop of Fruit tolerably well. I have alſo planted many of theſe Sort of Fig Trees againſt North Eaſt and North Weſt Aſpects, ſome of thoſe which were firſt planted, have produced a good Quantity of well taſted Fruit, which has encouraged me to plant many more of theſe Trees to the ſame Aſpects, and to increaſe my Number of Standard Trees.

I am aware, that what I have here advanced, in relation to the Pruning and Dreſſing of Fig Trees, will be condemned by great Numbers of People, who will not give themſelves Time to conſider and examine the Reaſons upon which I have founded this Practice, nor to make one ſingle Experiment to try the Truth of it, as being vaſtly different from the general Practice of moſt Gardeners, who always imagine, that Fig Trees ſhould never have much Pruning, or, at leaſt, that they ſhould always be ſuffered to grow very rude from the Wall, to ſome Diſtance. That by this Management I have often ſeen great Quantities of Fruit, I cannot deny, but then this has been only after mild Winters, for it is very certain, that in ſharp Froſts few of theſe outſide Shoots eſcape being greatly injured where they are not covered; whereas it rarely happens, that thoſe Shoots which are cloſely nailed to the Wall in Autumn, or laid down and covered, ſuffer the leaſt Damage, and the Fruits are always produced a Fortnight ſooner upon theſe Branches, than they are upon thoſe which grow from the Wall; but although the Trees which are ſuffered to grow rude from the Walls may produce a good Quantity of Fruit for a Year or two, yet afterward the Trees will only bear at the Ends of the Shoots, which will then be ſo far from the Wall, as to receive little Benefit from it, nor can the Trees be reduced again to any Regularity, without cutting away the greateſt Number of their Branches, by which a Year or two will be loſt, before they will come to bear again.

The Seaſon for Pruning, which I have laid down, being vaſtly different from the common Practice and Opinion of moſt Gardeners, will alſo be objected againſt, but I am ſure, if any one will make Trial of it, I doubt not his Experience will confirm what I have here advanced, for as one great Injury to this Tree proceeds from the too great Effuſion of Sap at the wounded Parts, ſo by this Autumn Pruning this is prevented; at that Seaſon, all the Parts of *European* Trees, which caſt their Leaves, are leſs replete with Moiſture than at any other Time of the Year, for by the long Continuance of the Summer's Heat, the Juices of Plants having been exhauſted in the Nouriſhment and Augmentation of Wood, Leaves, Fruits, *&c.* and alſo great Quantities being evaporated by Perſpiration, the Root not being able to ſend up a Supply equivalent to this great

Conſumption, the Branches muſt contain a much leſs Quantity of Sap than in the Spring, when it has had ſeveral Months Supply from the Root, which though but ſmall in Proportion to what is ſent up when the Heat is greater, yet there being little or no Waſte, either by Perſpiration or Augmentation, there muſt be a greater Quantity contained in the Branches, which alſo is eaſily to be obſerved, by breaking or cutting off a vigorous Branch of a Fig Tree at both Seaſons (the Sap, being milky, may be readily diſcerned;) when that cut in Autumn ſhall be found to ſtop its bleeding in one Day's Time, or leſs, whereas that cut in Spring will often flow a Week or more, and the Wound will be proportionably longer before it heals.

Of late ſome of theſe Trees have been planted againſt Fire Walls, which have ſucceeded very well where properly managed, but where they have been kept too cloſe, and drawn by Glaſſes, they have not produced much Fruit, therefore whenever this is practiſed, the Heat ſhould not be too great, nor the Glaſſes, or other Covering kept too cloſe, but at all Times, when the Weather is favourable, a good Share of free Air ſhould be admitted; and if the Trees are young, that their Roots are not extended beyond the Reach of the Covering, they muſt be frequently watered when they begin to ſhew Fruit, otherwiſe it will drop off, but old Trees, whoſe Roots are extended to a great Diſtance, will only require to have their Branches now and then ſprinkled over with Water. If theſe Trees are properly managed, the firſt Crop of Fruit will be greater than upon thoſe which are expoſed to the open Air, and will ripen ſix Weeks or two Months earlier, and a plentiful ſecond Crop may alſo be obtained, which will ripen early in *September*, and ſometimes in *Auguſt*, which is about the Seaſon of their ripening in the warmer Parts of *Europe*; but the Fires ſhould not be uſed to theſe Trees, till the Beginning of *February*, becauſe when they are forced too early, the Weather is frequently too cold to admit a ſufficient Quantity of freſh Air to ſet the Fruit, but the Covers ſhould be put over the Trees a Month before, to prevent the Shoots from being injured by the Froſt.

Fig Trees are propagated in *England*, either by the Suckers, which are ſent out from their Roots, and by Layers made by laying down their Branches, which in one Year will put out Roots ſufficient to be removed, or by planting Cuttings, which, if properly managed, will take Root; the firſt of theſe is a bad Method, becauſe all thoſe Trees which are raiſed from Suckers, are very ſubject to ſend out great Quantities of Suckers again from their Roots and the Branches of the Suckers are not ſo compact, as thoſe of the Layers, but are fuller of Sap, ſo in greater Danger of being injured by the Froſt; thoſe Plants which are propagated by Layers, are the beſt, provided the Layers are made from the Branches of fruitful Trees, for thoſe which are made from the Suckers, or Shoots, produced from old Stools, are very ſoft, and full of Sap, ſo are in Danger of ſuffering by the Froſt, and theſe will ſhoot greatly into Wood, but will not be very fruitful; for, when Trees have acquired a vicious Habit while young, it is ſeldom they are ever brought to be fruitful afterward, therefore the Shoots which are laid down, ſhould be ſuch as are woody, compact, and well ripened, not young Shoots full of Sap, whoſe Veſſels are large and open. The beſt Time for laying down the Branches is in Autumn, and if the Winter ſhould prove very ſevere, if they are covered with ſome old Tan, or any other Mulch, to keep the Froſt from penetrating the Ground, it will be of great Service to them; by the Autumn following, theſe will be ſufficiently rooted for removing, when they ſhould be cut off from the old Plants, becauſe at that Seaſon the Branches are not ſo full of Sap as in the Spring, ſo will not bleed ſo much as when cut off in the Spring. If the Place is ready to receive them, the Layers ſhould be tranſplanted in Autumn, where they are to remain, but if it is not, then the Layers may remain till the Spring, provided they are ſeparated from the old Plants in Autumn. As theſe Plants do not bear tranſplanting well when they are large, ſo it is the better Way to plant them at firſt in the Places where they are to remain, and after they are planted, the Surface of the Ground about their Roots ſhould be covered with Mulch to keep out the Froſt, and if the Winter ſhould prove very ſevere, it will be proper to cover the Branches with Reeds, Peas Haulm, Straw, or ſome other light Covering, which will prevent their tender Ends being killed by the Froſt, which frequently happens where this Care is wanting.

The other Method of propagating theſe Trees, is by Cuttings, taken from the Trees in Autumn, for the Reaſon before given; theſe muſt be choſen from ſuch Branches as are compact, whoſe Joints are near each other, and they ſhould have a Part of the former Year's Wood at their Bottom, and the Top of each ſhould be left entire, not ſhortened as is uſually practiſed with other Cuttings; then they ſhould be planted 8 or 9 Inches deep, in a Bed of loamy Earth, in a warm Situation, covering the Surface of the Ground, 3 or 4 Inches thick, with old Tanners Bark, to keep out the Froſt, and in ſevere Froſt their Tops covered with Straw, Peas Haulm, Fern, or other light Covering, to protect them from Froſt, which ſhould be removed in Spring, but the Tan may remain, for that will prevent the drying Winds of the Spring, and the Sun in Summer, from penetrating the Ground, ſo will be of great Uſe to ſecure the Cuttings from Injury; theſe Cuttings will be rooted ſufficiently by the following Autumn, when they ſhould be tranſplanted, and treated as the Layers.

If fruitful Branches of theſe Trees are cut off, and planted in Pots, or Tubs, filled with good Earth, and theſe are plunged into a good hot Bed of Tanners Bark in the Stove, they will put out Fruit early in the Spring, which will ripen the Middle of *May*.

We ſhall now return to the other Sorts of Figs, which grow naturally in warm Countries, but are preſerved in the Gardens of the curious in collecting rare exotick Plants, for theſe do not bear eatable Fruit in their native Soil, but their Leaves being large and beautiful, the Plants make a pleaſing Variety in the Stove.

The 2d Sort grows naturally in the *Levant*, where it becomes a large Tree, dividing into many Branches, which are garniſhed with Leaves ſhaped like thoſe of the Mulberry, ſo affords a friendly Shade in thoſe hot Countries. The Fruit is produced from the Trunk and large Branches of the Tree, and not on the ſmaller

Shoots, as in moſt other Trees; the Shape is like the common Fig, but is little eſteemed. This is called the Sycamore, or *Pharaoh*'s Fig Tree.

The 3d Sort grows naturally in *India*, where it is ſacred, ſo that none dare deſtroy them, it is called by ſome the *Indian* God Tree; this riſes with a woody Stem to a great Height, ſending out many ſlender Branches, which are garniſhed with ſmooth Heart-ſhaped Leaves, ending in a long Tail, or Point; they are entire, ſmooth, and of a light green, having pretty long Foot Stalks; they are between 6 and 7 Inches long, and three and a Half broad toward their Baſe, diminiſhing gradually to the Top, where they run out in a narrow Point, an Inch and a Half long. The Fruit comes out on the Branches, they are ſmall, round, and of no Value.

The 4th Sort riſes with many Stalks, which grow to the Height of 30 or 40 Feet, dividing into a great Number of Branches, which ſend out Roots from their under Side, many of which reach to the Ground, ſo that in ſuch Places where theſe Trees grow naturally, their Roots and Branches are ſo interwoven with each other, as to render the Places impaſſible. In *India* the *Banyans* trail the Branches of theſe Trees into regular Archades, and ſet up their Pagods under them, theſe being the Places of their Devotion. In *America*, they are equally plenty, and form ſuch Thickets, as neither Man or Beaſt can paſs through. The Leaves are of a thick Subſtance, ſmooth, and oval, ſix Inches long, and four broad, with obtuſe Ends. The Fruit is the Size of a Marble, and round, but of no Uſe.

The 5th Sort grows naturally in both *Indies*; this riſes with a woody Stalk, to the Height of 30 Feet, ſending out many Branches, which are garniſhed with oblong Leaves, ſtanding upon pretty long Foot Stalks; they are about ſix Inches long, and four broad, ending in an obtuſe Point, of a dark green, and ſmooth on their upper Side, but of a light green, and veined on their under Side. The Fruit is ſmall, and of no Value. The Branches ſend out Roots from their lower Side, which ſometimes reach the Ground.

The 6th Sort grows naturally in the *Weſt-Indies*, where it riſes 30 or 40 Feet high, ſending out many ſlender Branches, which put out Roots as the former. The Leaves are 8 or 9 Inches long, and two broad, ending in Points. The Fruit is ſmall, round, and of a blood Colour when ripe, but is not eatable.

The 7th Sort grows naturally in *India*, where it riſes 25 Feet, and divides into many Branches, garniſhed with oval pointed Leaves, ſmooth, and of a lucid green. The Fruit is ſmall, and grows in Cluſters from the Side of the Branches; theſe are not eatable.

The 8th Sort grows naturally in *India*; this is a low trailing Shrub, whoſe Stalks put out Roots at their Joints, which ſtrike into the Ground, ſo is propagated plentifully. The Leaves are two Inches and a Half long, and near two Inches broad, ending in Points; they are of a lucid green, and are placed without Order on the Branches; the Fruit is ſmall, and not eatable.

The 9th Sort riſes with a ſtrong, upright, woody Stalk, 20 Feet high, ſending out ſeveral Side Branches, garniſhed with large, oval, ſtiff Leaves, about 14 Inches long, near a Foot broad, and rounded at the Ends; they have ſeveral tranſverſe Veins, from the Midrib to the Sides. The Foot Stalks are long, and frequently are turned next to the Branches; the upper Side of the Leaves are of a lucid green, the under of a grey, or Sea-green Colour, of a thick Subſtance, and very ſmooth; this grows naturally in *India*, from whence it was brought to the Gardens in *Holland*.

The 10th Sort grows naturally in the *Weſt-Indies*, where it riſes 20 Feet high, ſending out many Side Branches, covered with a white Bark, and garniſhed with oblong Heart-ſhaped Leaves, ending in acute Points; they are about three Inches long, and one and a Half broad, near the Baſe, of a lucid green on their upper Side, but of a pale green on their under, ſtanding on very long Foot Stalks. The Fruit comes out from the Side of the Branches, toward their Ends; they are about the Size of large gray Peas, and of a deep purple Colour, ſitting cloſe to the Branches; theſe are not eatable.

The 11th Sort grows naturally at *La Vera Cruz*; this riſes with many ſhrubby Stalks, 12 or 14 Feet high, and divide into many ſmaller Branches, garniſhed with oval ſtiff Leaves, which are obtuſe; they are 4 Inches long, and 3 broad, of a light green, and ſtand on very ſhort Foot Stalks, which are joined to a Cup, in which the Fruit ſits; this is globular, and the Size of a middling Nutmeg, of a deep yellow, when ripe, but is not eatable.

The 2d Sort, I believe, is not in *England* at preſent, I raiſed two or three of theſe Plants from Seeds in the Year 1736, which were deſtroyed by the ſevere Froſt in 1740, ſince which Time I have not been able to procure any of the Seeds. The other Sorts are preſerved in ſeveral curious Gardens; they are eaſily propagated by Cuttings during the Summer Seaſon. When the Cuttings are taken from the Plants, they ſhould be laid in a dry ſhady Place for two or three Days, that the Wounds may be healed over, otherwiſe they are apt to rot; for all theſe Plants abound with a milky Juice, which flows out whenever they are wounded, for which Reaſon the Cuttings ſhould have their wounded Part healed over and hardened before they are planted; after which they ſhould be planted in Pots filled with ſandy light Earth, and plunged into a moderate hot Bed, where they ſhould be ſhaded from the Sun, and two or three Times a Week gently refreſhed with Water, if the Seaſon is warm, but they muſt not have too much Moiſture, for that will infallibly deſtroy them. When the Cuttings have taken Root ſufficient to tranſplant, they ſhould be each planted into a ſeparate ſmall Pot filled with light undunged Earth, and plunged into the hot Bed again, being careful to ſhade them until they have taken freſh Root, then they ſhould have a large Share of free Air admitted at all Times, when the Weather is favourable, to prevent their drawing up weak, and to give them Strength before the Cold comes on. In Autumn the Pots ſhould be removed into the Stove, and plunged into the Tan Bed, where they ſhould conſtantly remain, and muſt be treated as other tender Plants from the ſame Countries; for although two or three Sorts may be treated in a hardier Manner, yet they will not make much Progreſs.

FICUS INDICA. *See* Opuntia.

FILAGO. There are ſeveral Species of this Genus, ſome of which grow naturally upon barren Land in moſt Parts of *England*. They are called by ſome Cottonweed, by others Cudweed, their Leaves being white, and, when broken, have cottony Threads. Theſe have been ranged under the Genus of *Gnaphalium* by moſt Botaniſts, and one of the Species which is uſed in Medicine, ſtands in the Liſt of Simples by that Name. As theſe Plants are not cultivated in Gardens, I ſhall not trouble the Reader with a farther Account of them.

FILBERT. *See* Corylus.

FILIPENDULA. *See* Spiræa.

FILIUS ANTE PATREM [*i. e.* the Son before the Father;] an Expreſſion which Botaniſts apply to Plants, whoſe Flowers come out before their Leaves; or thoſe Plants which ſend forth Side Branches of Flowers, which advance above the Middle.

FILIX, Fern. There are great Varieties of this Plant in different Parts of the World, but particularly in *America*, as may be ſeen in the *Natural Hiſtory* of *Jamaica*, by Sir *Hans Sloane*, Bart. and in *Plumier*'s *American Ferns*: But as they are Plants ſeldom propagated in Gardens, I ſhall paſs them over in this Place.

FILM, that woody Skin which ſeparates the Seeds in the Pods of Plants.

FIMBRIATED [of *Fimbria*, Lat. a Fringe.] a Term relating to the Leaves of Plants, when they are jagged on the Edges, having, as it were, a Fringe about them; theſe are often called furbelowed Leaves.

FIR TREE. *See* Abies.

FISTULAR FLOWERS [*Flores Fiſtulares*, of *Fiſtula*, Lat. a Pipe,] ſuch as are compounded of many long, hollow, ſmall Flowers, like Pipes.

FLESH, among Botaniſts, is all the Subſtance of any Fruit that is between the outer Rind and the Stone, or that Part of any Root that is fit to be eaten.

FLORIFEROUS [*florifer*, Lat.] bearing Flowers.

FLORIST, one who is converſant with, or ſkilled in Flowers.

FLORULENT, FLORULOUS [*florentulus florulus*, Lat.] Flowery, full of Flowers; alſo Bloſſoming.

FLOWER: a Flower is a natural Production which precedes the Fruit, which includes the Grain or Seed. Though a Flower is a Thing ſo well known, yet the Definition of this Part of a Plant is as various almoſt as the Authors who define it. *Jungius* defines it to be the more tender Part of a Plant, remarkable for its Colour, or Form, or both, cohering with the Fruit. Yet this Author himſelf confeſſes, that this Definition is too narrow; for ſome of thoſe Bodies which he allows to be Flowers, are remote from the Fruit.

Mr. *Ray* ſays, it coheres, *for the moſt Part*, with the Rudiments of the Fruit. Thus the Words *for the moſt Part* are hardly to be admitted into Definitions.

In my Opinion, Dr. *Martyn* has been happier, in his Definition: He defines a Flower to be the *Organs of Generation of both Sexes adhering to a common* Placenta, together with their common Coverings; or of either Sex ſeparately, with its proper Coverings if it have any.

For the Parts of a Flower, *See* the Explanation of the Technical Terms of Botany, after the Preface.

Flowers, according to the Number of their Petals, are called Monopetalous, Dipetalous, Tripetalous, Tetrapetalous, *&c.*

The Structure of Flowers is indeed very various; but, according to Dr. *Grew*, the Generality have theſe three Parts in common, *viz.* the *Empalement*, the *Foliation*, and the *Attire*.

Mr. *Ray* reckons, that every perfect Flower has the *Petals*, *Stamina*, *Apices*, and *Stylus* or *Piſtil*; and ſuch as want any of theſe Parts, he accounts imperfect Flowers.

In moſt Plants there is a *Perianthium*, *Calyx*, or *Flower Cup*; which is of a ſtronger Conſiſtence than the Flower itſelf, and deſigned to ſtrengthen or preſerve it.

Flowers are diſtinguiſhed into *Male*, *Female*, or *Hermaphrodite*.

The male Flowers are thoſe in which are the *Stamina*, but have no Germen or Style, the ſame which Botaniſts call ſtamineous Flowers; theſe have no Fruit.

The femal Flowers, are ſuch as contain the Germen and Style, or Piſtil, which is ſucceeded with Fruit, and are called fruitful, or kniting Flowers.

The hermaphrodite Flowers are ſuch in whom the two Sexes are contained, *i. e.* the male and female Parts are found in the ſame Flower, which are the moſt general Kind; ſuch as the Daffodil, Lilly, Tulip, Althæa, Geranium, Roſemary, Sage, Thyme.

The Structure of Parts is much the ſame in thoſe where the Sexes are divided; the Difference between them conſiſting in this, that the *Stamina* and *Summits* or *Apices*, i. e. the male Parts in theſe are ſeparate from the Styles or Piſtils, being ſometimes on the ſame Plants, and ſometimes on different ones.

Among the Plants which bear both male and female Parts, but at a Diſtance from each other, are reckoned the Cucumber, Melon, Gourd, *Turky* Wheat, Walnut, Oak, Beech, *&c.*

FOENICULUM. *Tourn. Inſt. R. H. Anethum. Lin. Gen. Plant.* 326. Fennel; in *French*, *Fenouil.*

The *Characters* are,

It hath an umbellated Flower; the great Umbel is compoſed of many ſmaller, which have no Involucrum; the Umbel is uniform; the Flowers have five incurved Petals, and five Stamina terminated by roundiſh Summits: The Germen is ſituated under the Flower, ſupporting two ſmall Styles, crowned by roundiſh Stigmas. The Germen afterward turns to an oblong Fruit, deeply channeled, dividing into two Parts, each containing a ſingle Seed, flat on one Side, but convex and channeled on the other.

The *Species* are,

1. FOENICULUM *foliis decompoſitis, foliolis brevioribus multifidis, ſemine breviore.* Fennel with decompounded Leaves, whoſe ſmall Leaves are ſhorter and end in many Points, and a ſhorter Seed. This is the *Foeniculum vulgare Germanicum. C. B. P.* 147. Common Fennel.

2. FOENICULUM *foliis decompoſitis, foliolis longioribus ſemine longiori.* Fennel with decompounded Leaves, whoſe ſmall Leaves are very long, and a longer Seed. This is the *Foeniculum dulce, majore & albo ſemine. J. B.* 3. p. 2, 4. Sweet Fennel having a larger white Seed.

3. Foeniculum *humilius, radice cauleſcente carnoſo, ſeminibus recurvis, radice annuâ.* Dwarf Fennel with a fleſhy Stalk, recurved Seeds, and an annual Root. This is the *Foeniculum dulce Azoricum. Pluk. Alm.* Sweet *Azorian* Fennel called *Finochio.*

The 1ſt Sort is the common Fennel cultivated in Gardens, and has ſown itſelf in many Places, where it has been introduced in ſuch Plenty, as to appear as if it were a Native in *England*; but it is no where found at a great Diſtance from Gardens, ſo has been undoubtedly brought into *England.* There are two Varieties of this, one with light green Leaves, and the other with very dark Leaves, but theſe I believe are only Varieties which ariſe from the ſame Seeds; but this is very difficult to aſcertain, for unleſs the Seeds were ſown ſeparately in ſome Place where neither of theſe Plants have been growing before, it cannot be done; for the Seeds of theſe Plants which have ſcattered, will remain in the Ground ſome Years, and when expoſed near the Surface will grow; ſo frequently come up where the other Seeds are ſown, and thereby the two Sorts may accidentally mix.

The common Fennel is ſo well known, as to need no Deſcription. This hath a ſtrong fleſhy Root which penetrates deep into the Ground, and continues ſeveral Years. It flowers in *July*, and the Seeds ripen in Autumn. The beſt Time to ſow them, is ſoon after they are ripe; the Plants will come up in the Spring, and require no other Care, but to keep them clean from Weeds, and thin the Plants where they are too cloſe; it will grow in any Soil or Situation. The Leaves, Seeds, and Roots of this, are uſed in Medicine; the Root is one of the five opening Roots, and the Seed one of the greater carminative Seeds. There is a ſimple Water made from the Leaves, and a diſtilled Oil from the Seed.

The ſweet Fennel has been by many ſuppoſed only a Variety of the common Sort, but I have cultivated it in the ſame Ground with that, where it has always retained its Differences. The Leaves of this are very long and ſlender, growing more ſparſedly, and do not end in ſo many Points as thoſe of the common Sort; the Stalks do not riſe ſo high, and the Seeds are longer, narrower, and of a lighter Colour. Theſe Seeds are generally imported from *Germany* or *Italy*, and are by ſome preferred to thoſe of the common Sort for Uſe, being much ſweeter.

This may be propagated as the former Sort, being very hardy, but the Roots are not of ſo long Duration.

The 3d Sort is ſuppoſed to have been originally brought from the *Azorian Iſlands*; it has been long cultivated in *Italy* as a Sallad Herb, under the Title of *Finochio*; and there are ſome few Gardens in *England*, where it is now cultivated, but in ſmall Quantities, for there are not many *Engliſh* Palates which reliſh it, nor is it eaſy to be furniſhed with good Seeds; thoſe which are annually brought from *Italy*, ſeldom prove good, and it is difficult to ſave it in *England*, becauſe the Winter frequently kills thoſe Plants which are left for Seeds; and when any good Plants of the early Sowing are left for Seeds, they do not ripen, unleſs the Autumn proves very favourable.

This Sort hath very ſhort Stalks, which ſwell juſt above the Surface of the Ground, to four or five Inches in Breadth, and almoſt two thick, being fleſhy and tender: This is the Part which is eaten when blanched, with Oil, Vinegar, and Pepper, as a cold Sallad. When theſe Plants are permitted to run for Seeds, the Stalks do not riſe more than a Foot and a Half high, having a large ſpreading Umbel ſtanding on the Top. The Seeds of this Sort are narrow, crooked, and of a bright yellow Colour; they have a very ſtrong Smell like Aniſeed, and are very ſweet to the Taſte.

The Manner of cultivating this Plant is as follows: Your firſt Care muſt be to procure ſome good Seeds from ſome Perſon who has been careful in the Choice of the Plants, otherwiſe there will be little Hope of having it good; for the Plants will run up to Seeds before they ſwell to any Size, ſo will not be fit for Uſe: Then make Choice of a good Spot of light rich Earth, not dry nor very wet, for in either Extreme this Plant will not thrive. The firſt Crop may be ſown about a Fortnight in *March*, which, if it ſucceeds, will be fit for Uſe in *July*; and ſo by ſowing at ſeveral Times, there may be a Supply for the Table till the Froſt puts a Stop to it. After having well dug and levelled the Ground ſmooth, you ſhould make a ſhallow Rill by a Line, into which you muſt ſcatter your Seeds pretty thin; for if your Plants are ſix Inches aſunder in the Rows, it will be full near enough; but however, you muſt expect ſome of your Seeds to fail; and therefore you ſhould ſcatter them about two Inches Diſtance, then cover the Seeds about half an Inch thick with Earth, laying it ſmooth: Theſe Rills ſhould be made 18 Inches aſunder, or more, that there may be Room to clean the Ground, as alſo to earth up the Plants when they are full grown. When the Plants come up, which will be in about 3 Weeks or a Month after ſowing, you muſt with a ſmall Hoe cut up all the Weeds between them, and where the Plants are too cloſe, they ſhould be cut out to about 4 Inches Diſtance; and as they advance, and the Weeds ſpring again, they ſhould, from Time to Time be hoed; and at the laſt Time of thinning them, they ſhould be left 7 or 8 Inches aſunder at leaſt. If your Kind be good, the Stems of the Plants will increaſe to a conſiderable Bulk juſt above the Surface of the Ground; which Part ſhould be earthed up in the Manner of Celery, to blanch, about a Fortnight before it is uſed, and this will cauſe it to be very tender and criſp.

Your ſecond Crop ſhould be ſown about 3 Weeks after the firſt, and ſo continue ſowing every 3 Weeks or a Month till the End of *July*, after which Time it will be too late for the Plants to come to any Perfection. But you ſhould obſerve to ſow in *April*, *May*, and *June*, on a moiſter Soil than that which you ſowed the firſt on; as alſo what you ſow in the latter Part of *July*, ſhould be ſown on a drier Soil, and in a warmer Situation; becauſe this Crop will not be fit for Uſe till late in Autumn, and therefore will be ſubject to Injuries from too much wet or cold Weather, if on a moiſt Soil. But as the Ground is very often extreme dry in *June* and *July*, and the Seeds more apt to miſcarry and not come up, you ſhould therefore obſerve to water and ſhade the Beds where this Seed is ſown at that Seaſon, until the Plants come up. And if the Seaſon ſhould prove dry, the Plants muſt be duly watered, otherwiſe they will run up to Seed before they are of any Size; therefore there ſhould be a Channel made where every Row of Plants grow, to detain the Water poured on them, and prevent its running off. In Autumn, if there ſhould happen ſharp Froſts, it will be very proper to cover the Plants with Peas Haulm, or other light Covering, to prevent their being pinched, by which Method they may be continued for Uſe till the Middle of Winter.

A ſmall Bed will be ſufficient at each Sowing for a middling Family; and a Bed of about 20 Feet long, and 4 broad, will be full enough at a Time, for a large one.

FOENUM BURGUNDIACUM. *See* Medica Sativa.

FOENUM GRÆCUM. *See* Trigonella.

FOOT STALKS, are thoſe ſmall Stalks which immediately ſuſtain the Leaves, Flowers, or Fruit.

FOUNTAINS are Sources or Springs of Water, ariſing out of the Ground.

Of artificial Fountains there are a great Variety, the Mechaniſm of which not being to my Purpoſe, I will not dwell upon it; though I may aſſert, that they are not only great Ornaments to a fine Garden, but alſo of great Uſe. But they ought not to be placed too near the Houſe, by Reaſon of the Vapours that ariſe from the Water, which may be apt to ſtrike a Damp to the Wall, and ſpoil the Paintings, *&c.* and the Summer Vapours may cauſe a Malignity in the Air, and ſo be prejudicial to the Health of the Family; and likewiſe the Noiſe may be incommodious in the Night.

Fountains in a Garden ſhould be ſo diſtributed, that they may be ſeen almoſt all at one Time, and that the Water Spouts may range all in a Line one with another, which is the Beauty of them, for this occaſions an agreeable Confuſion to the Eye, making them appear to be more in Number than really they are. See *Jet d'Eau*, *Water*, &c.

FRAGARIA. *Lin. Gen. Plant.* 558. *Tourn. Inſt. R. H.* 295. Strawberries; in *French*, *Fraſier*.

The *Characters* are,

The Empalement is of one Leaf, cut into 10 *Parts at the Top. The Flower hath* 5 *roundiſh Petals, which are inſerted in the Empalement, and ſpread open. It hath* 20 *Stamina, inſerted in the Empalement, and terminated by Moon-ſhaped Summits. It hath a great Number of Germina collected into a Head, each having a ſingle Style, inſerted in the Side of the Germen, crowned by ſingle Stigmas; this Head becomes a large, ſoft, pulpy Fruit, which, if left, falls away, leaving many ſmall angular Seeds in the Empalement.*

The *Species* are,

1. FRAGARIA *foliis ovatis ſerratis, calycibus brevibus, fructu parvo.* Strawberry with oval ſawed Leaves, ſhort Empalements, and a ſmall Fruit. This is the *Fragaria vulgaris. C. B. P.* 226. The common, or Wood Strawberry.

2. FRAGARIA *foliis oblongo-ovatis ſerratis, infernè incanis, calycibus longioribus, fructu ſubrotundo.* Strawberry with oblong, oval, ſawed Leaves, hoary on their under Side, longer Empalements, and a roundiſh Fruit. This is the *Fragaria Virginiana fructu Coccineo. Hiſt. Ox.* 2. 186. *Virginia* Strawberry with a Scarlet Fruit commonly called the Scarlet Strawberry.

3. FRAGARIA *foliis ovato-lanceolatis rugoſis, fructu ovato.* Strawberry with oval, Spear-ſhaped, rough Leaves, and an oval Fruit. This is the *Fragaria fructu parvi pruni magnitudine. C. B. P.* 327. Strawberry with Fruit as large as a ſmall Plum, commonly called Hautboy Strawberry.

4. FRAGARIA *foliis ovatis carnoſis hirſutis, fructu maximo.* Strawberry with oval, fleſhy, hairy Leaves, and a large Fruit. This is the *Fragaria Chiloenſis, fructu maximo foliis carnoſis hirſutis. Hort. Elth.* 145. *Tab.* 120. Strawberry of *Chili* with a large Fruit, and hairy fleſhy Leaves, called *Frutilla*, in *America*.

There are ſeveral other Varieties of this Fruit, now cultivated in *England*; but I have not ſeen any other which can be called a diſtinct Species; theſe, I think, may be allowed to be ſo, for they never alter from one to the other, by any Cultivation, though the Fruit is frequently improved, ſo as to be of a larger Size thereby; therefore thoſe who have ſuppoſed them but one Species, have greatly erred in ſo doing; I ſhall therefore mention the ſeveral Varieties of Strawberry, which are at preſent to be found in the Gardens, under the Species to which they naturally belong.

The firſt Sort is the common Wood Strawberry, which grows naturally in the Woods in *England*, and is ſo well known, as to need no Deſcription; of this there are three Varieties, 1. The common Sort with red Fruit, 2. The white Wood Strawberry, which ripens a little later in the Seaſon, and is by many Perſons preferred to it for its quick Flavour, but as it ſeldom produces ſo large Crops of Fruit as the red Sort, ſo it is not very generally cultivated. 3. The green Strawberry, by ſome called the Pine Apple Strawberry, from its rich Flavour. The Fruit of this is green when ripe; it is very firm, and hath a very high Flavour; this is a late ripe Fruit, and unleſs it is planted in a moiſt loamy Soil, it is a very bad Bearer, but in ſuch Land where it does ſucceed, it merits Cultivation as much as any of the Sorts.

The Scarlet Strawberry is the firſt ripe, for which Reaſon it merits Eſteem, had it nothing elſe to recommend it, but the Fruit is ſo good, as by many Perſons of good Taſte to be preferred to it; this was brought from *Virginia*, where it grows naturally in the Woods, and is ſo different from the Wood Strawberry in Leaf, Flower, and Fruit, that there can be no Doubt of their being diſtinct Species.

A Variety of this hath been of late introduced from the Northern Parts of *America*, which has the Appearance of a diſtinct Species. The Leaves of this are rounder, and not ſo deeply veined; the Crenatures on their Edges broader and more obtuſe; the Leaves which compoſe the Empalement, are much longer, hairy, and the Fruit larger; but as in other Reſpects it approaches near to the Scarlet Strawberry, ſo I have choſen to join it to that, rather than make a diſtinct Species of it; this I have been informed grows naturally in *Louiſiana*.

The Hautboy Strawberry, which the *French* call *Capitons*, came originally from *America*, but has been long cultivated in the *Engliſh* Gardens, and is ſo very different from the other Sorts in Leaf, Flower, and Fruit, that no one can doubt of their being different Species; there is an Improvement of this Sort, which is commonly called the Globe Hautboy. The Fruit of this is larger, and of a globular Form, but this Difference has certainly ariſen from Culture; for where theſe have been neglected a Year or two, they have degenerated to the common Hautboy again; where the Ground is proper for this Plant, and their Culture is well managed, the Plants will produce great Plenty of Fruit, which will be large, and well flavoured, and by ſome Perſons are preferred to all the other Sorts.

The *Chili* Strawberry was brought to *Europe* by Monſ. *Frazier*, an Engineer, who was ſent to *America* by the late King of *France*, and was firſt planted in the Royal Garden at *Paris*, from whence it was communicated to ſeveral curious Perſons in *Holland*, and in the Year 1727, I brought a Parcel of the Plants to *England*, which were communicated to me by Mr. *George Clifford*, of *Amſterdam*, who had large Beds of this Sort growing in his curious Gardens at *Hartecamp*. The Leaves are hairy, oval, and of a much thicker Subſtance, than of any Sort yet known, and ſtand upon very ſtrong hairy Foot Stalks; the Runners from the Plants are very large, hairy, and extend to a great Length, putting out Plants at ſeveral Diſtances. The Foot Stalks which ſuſtain the Flowers are very ſtrong; the Leaves of the Empalement are long and hairy. The Flowers are large, and often deformed, ſo are the Fruit, which is very large, and when cultivated in very ſtrong Land, the Plants produce Plenty of Fruit, which is firm, and very well flavoured, but as it is a bad Bearer, in general it has been neglected.

Strawberries love a gentle hazelly Loam, in which they will thrive and bear greater Plenty of Fruit, than in a light rich Soil. The Ground ſhould alſo be moiſt, for if it is very dry, all the Watering which is given to the Plants in warm dry Seaſons, will not be ſufficient to procure Plenty of Fruit, nor ſhould the Ground be much dunged, for that will cauſe the Plants to run into Suckers, and grow luxuriant, and will render them leſs fruitful.

The beſt Time to remove theſe Plants is in *October*, that they may get new Roots before the hard Froſt ſets in, which looſens the Ground, ſo that if the Roots are not pretty well eſtabliſhed in the Ground, the Plants are frequently turned out of it by the firſt Thaw, therefore the ſooner they are planted when the autumnal Rains begin, the better will their Roots be eſtabliſhed, and there will be leſs Danger of their miſcarrying; ſometimes thoſe which are well rooted, will produce a few Fruit the firſt Year; there are ſome who tranſplant them in Spring, but where this is done, they muſt be duly ſupplied with Water in dry Weather, otherwiſe they will not ſucceed.

The Ground in which they are planted ſhould be thoroughly cleaned from the Roots of Couch, and all other bad Weeds, for as the Strawberry Plants are to remain three Years before they are taken up, ſo if any Roots of thoſe bad Weeds are left in the Ground, they will have Time to multiply ſo greatly as to fill it, and overbear the Strawberry Plants. The Ground ſhould alſo be well trenched and made level, then the uſual Method is to lay it out into Beds of four Feet broad, with Paths two Feet, or two and a Half broad between each; theſe Paths are neceſſary for the Convenience of gathering the Fruit, and for Weeding and Dreſſing the Beds; after the Beds are marked out, there ſhould be four Lines drawn in each, at a Foot Diſtance, which will leave ſix Inches Space on each Side, between the Outſide Rows and the Paths; then the Plants ſhould be planted at about a Foot Diſtance from each other in the Rows, in a Quincunx Order, being careful to cloſe the Earth to the Roots of the Plants, and if there ſhould not happen Rain ſoon after, they ſhould be well watered to ſettle the Earth to their Roots.

The Diſtance here mentioned for the Plants to be placed, muſt be underſtood for the Wood Strawberries only, for as the other Sorts grow much larger, their Diſtances muſt be proportioned to their ſeveral Growths; therefore the Scarlets and Hautboys, ſhould have but three Rows of Plants in each Bed, which ſhould be at fifteen Inches Diſtance, and the Plants in the Rows ſhould be allowed the ſame Space from each other, and the *Chili* Strawberry muſt have but two Rows of Plants in each Bed, which ſhould be two Feet apart in the Rows, for as theſe grow very ſtrong, if they have not Room to ſpread, they will not be very fruitful.

In the Choice of proper Plants of any of the Sorts, depends the whole Succeſs, for if they are promiſcuouſly taken from Beds without Care, great Part of them will become barren; theſe are generally called blind, which is when there are Plenty of Flowers, but no Fruit produced; if theſe Flowers are well examined, they will be found to want the female Organs of Generation, moſt of them abounding with Stamina, but there are few, if any Styles, ſo that it frequently happens among theſe barren Plants, that ſome of them will have a Part of an imperfect Fruit formed, which will ſometimes ripen; this Barrenneſs is not peculiar to Strawberries, but is general to all thoſe Plants which have creeping Roots, or Stalks, and the more they increaſe from either, the ſooner they become barren, and this in ſome Degree runs through the vegetable Kingdom: for Trees and Shrubs which are propagated by Cuttings, are generally barren of Seeds in two Generations, that is, when they are propagated by Cuttings, which were taken from Plants raiſed by Cuttings; this I have conſtantly found to hold in great Numbers of Plants, and in Fruit Trees it often happens, that thoſe Sorts which have been long propagated by Grafts and Buds, have no Kernels: But to return to the Choice of the Strawberry Plants; theſe ſhould never be taken from old neglected Beds, where the Plants have been ſuffered to ſpread or run into a Multitude of Suckers, nor from any Plants which are not very fruitful, and thoſe Offſets which ſtand neareſt to the old Plants, ſhould always be preferred to thoſe which are produced from the trailing Stalks at a farther Diſtance; the Wood Strawberry is beſt when the Plants are taken freſh from the Woods, provided they are taken from fruitful Plants, becauſe they are not ſo liable to ramble and ſpread, as thoſe which are taken from Plants which have been long cultivated in Gardens; therefore thoſe who are curious in cultivating this Fruit, ſhould be very careful in the Choice of their Plants.

When the Plants have taken new Root, the next Care is, if the Winter prove ſevere, to lay ſome old Tanners Bark over the Surface of the Bed between the Plants, to keep out the Froſt; this Care is abſolutely neceſſary to the *Chili* Strawberry, which is frequently killed in hard Winters, where they are expoſed without any Covering; therefore where Tanners Bark, cannot be eaſily procured, Saw-duſt, or Sea Coal Aſhes may be uſed, or in Want of theſe, if decayed Leaves of Trees, or the Branches of ever-green Trees with their Leaves upon them, are laid over the Beds, to prevent the Froſt from penetrating deep into the Ground, it will ſecure the Plants from Injury.

The following Summer, the Plants ſhould be conſtantly kept clean from Weeds, and all the Runners pulled off as faſt as they are produced; if this is conſtantly practiſed, the Plants will become very ſtrong by the following Autumn, whereas when this is neglected (as is too frequently ſeen) and all the Runners permitted to ſtand during the Summer Seaſon, and then pulled off in Autumn, the Plants will not be half ſo ſtrong as thoſe where that Care has been taken; therefore there will not be near the Quantity of Fruit upon them the following Spring, nor will the Fruit be near ſo large and fair; and where proper Care is taken of the Plants the firſt Summer, there is generally a plentiful Crop of Fruit the ſecond Spring, whereas when this is neglected, the Crop will be thin, and the Fruit ſmall.

As this Fruit is very common, there are but few Perſons who cultivate it with proper Care, therefore I ſhall give ſome Directions for doing it, which, if carefully practiſed, will be attended with Succeſs.

The old Plants of Strawberries are thoſe which produce the Fruit, for the Suckers never produce any till they have grown a full Year; therefore it appears how neceſſary it is to diveſt the old Plants of them, for whereever they are ſuffered to remain, they rob the fruitful Plants of their Nouriſhment, in Proportion to their Number, for each of theſe Suckers ſend out a Quantity of Roots, which interfere, and are ſo cloſely matted together, as to draw away the greateſt Part of the Nouriſhment from the old Roots, whereby they are greatly weakened; and theſe Suckers alſo render each other very weak, that from hence the Cauſe of Barrenneſs ariſes, for I have known where the old Plants have been conſtantly kept clear from Suckers, they have continued very fruitful four or five Years without being tranſplanted; however it is the beſt Way to have a Succeſſion of Beds, that after three Years ſtanding, they may be taken up, becauſe by that Time they will have exhauſted the Ground of thoſe vegetable Salts, neceſſary for their Nouriſhment, for it is always obſerved, that Strawberries planted on freſh Land, are the moſt fruitful.

The next Thing to be obſerved, is in Autumn, to diveſt the Plants of any Strings, or Runners, which may have been produced, and alſo of all the decayed Leaves, and the Beds cleared from Weeds; then the Paths ſhould be dug up, and the Weeds buried which were taken from the Beds, and ſome Earth laid over the Surface of the Beds between the Plants, this will ſtrengthen and prepare them for the following Spring; and if after this, there is ſome old Tanners Bark laid over the Surface of the Ground between the Plants, it will be of great Service to them. In Spring, after the Danger of hard Froſt is over, if the Ground between the Plants in the Beds is forked, with a narrow three pronged Fork, to looſen it and break the Clods, by this Operation, the Tan which was laid over the Surface of the Ground in Autumn will be buried, which will be a good Dreſſing to the Strawberries, eſpecially in ſtrong Land; then about the End of *March*, or the Beginning of *April*, if the Surface of the Beds is covered with Moſs, it will keep the Ground moiſt, and prevent the drying Winds from penetrating the Ground, and thereby ſecure a good Crop of Fruit, and the Moſs will preſerve the Fruit clean, that when heavy Rains may fall after the Fruit is full grown, there will be no Dirt waſhed over them, which frequently happens, ſo that the Fruit muſt be waſhed before it is fit for the Table, which greatly diminiſhes its Flavour; therefore where this Method is practiſed, the Fruit may be had in Perfection.

The Soil in which the *Chili* Strawberry ſucceeds beſt, is a very ſtrong Brick Earth, approaching near to Clay; in this Soil I have ſeen them produce a tolerable good Crop, and the Fruit has been extremely well flavoured, and if the Runners are cut off as they are produced, ſo as to leave only the old Plants, I make no Doubt but they may be as fruitful as the common Hautboy, this I mention from one or two Experiments, made by my Direction, and not from Theory.

Some Perſons are ſo fond of Strawberries, as to be at an Expence to obtain them early in the Year, and to continue them as late in the Seaſon as poſſible; and ſhould I omit to give Directions for both theſe Managements, they would ſuppoſe the Book very defective, therefore I ſhall mention the Practice of a few who have ſucceeded beſt in the Management of theſe Fruits, I ſhall begin with Directions for obtaining theſe Fruits early in the Spring.

Where there are hot Walls erected in Gardens for producing early Fruit, it is very common to ſee Strawberries planted in the Borders, that the Fire which is applied for ripening the Fruit againſt the Walls, may ſerve the Purpoſe of bringing forward the Strawberries; but where this is practiſed, the Strawberry Plants ſhould be annually renewed, and all the Earth of the Borders taken out at leaſt two Feet deep, and freſh Earth brought in, which will be equally good for the Wall Trees; but as was before obſerved, that the old Plants of Strawberries only, are thoſe which produce the Fruit, there ſhould be a ſufficient Number of Plants brought up in Pots to ſupply the Border annually, and the ſame muſt be done if they are to be raiſed on a common hot Bed, or in Stoves; therefore I ſhall begin with giving Directions for raiſing and preparing the Plants for thoſe Purpoſes.

The Sorts which are the moſt proper for forcing early, are the Scarlet and the Wood Strawberries, for the Hautboy grows too large for this Purpoſe. In the Choice of the Plants, there ſhould be an eſpecial Care taken to have them from the moſt fruitful Plants, and thoſe which grow immediately to the old Plants; theſe ſhould be taken off in Autumn, and each planted in a ſeparate ſmall Pot filled with loamy Soil, and placed in a ſhady Situation till they have taken Root, after which they may be removed to an open Situation, where they may remain till the Middle of *November*, when the Pots ſhould be plunged into the Ground up to their Rims, to prevent the Froſt from penetrating through the Side of the Pots; if theſe are placed near a Wall, Pale, or

Hedge, expoſed to an Eaſt Aſpect, or North Eaſt, they will ſucceed better than in a warm Situation, becauſe they will not be forced too forward, the only Care they require, is to ſecure them from being turned out of the Pots after Froſt. The Spring following the Plants will be ſo far advanced, as to have filled the Pots with their Roots, by the End of *April*, when they ſhould be turned out of the Pots, and their Roots pared; then planted into Penny Pots filled with the like loamy Soil, and plunged into the Ground in a ſhady Situation, where they ſhould remain the following Summer, during which Time they muſt be duly kept clean from Weeds, and all the Runners taken off as faſt as they are produced; likewiſe if any Flowers come out, they muſt be pinched off, and not ſuffered to bear Fruit, which would weaken the Plants, for there cannot be too much Care taken to have the Plants as ſtrong as poſſible, that they may produce Plenty of Fruit, without which they are not worth the Trouble of forcing.

About the Middle of *October*, or earlier, if the Autumn proves cold, the Pots ſhould be removed into a warmer Situation, to prepare them for forcing, for they ſhould not be ſuddenly removed from a very cold Situation immediately into the Stove, or hot Bed, but be gradually prepared for it; but where they are deſigned for the Borders near a hot Wall, they may then be turned out of the Pots, and planted into the Borders, that they may have Time to get freſh Rooting, before the Fires are made to heat the Walls; when theſe are planted, they may be placed very cloſe to each other, for as they are deſigned to remain there no longer than till they have ripened their Fruit, they will not require much Room, as their Roots will find ſufficient Nouriſhment below, and alſo from the Earth which is filled into the Spaces between the Balls of Earth, about their Roots; and it is of Conſequence to get as much Fruit as poſſible in a ſmall Space where there is an Expence to force them early. If the Fires are lighted about *Chriſtmas*, the Strawberries in theſe Borders will be ripe the End of *March*, or if the Seaſon ſhould prove very cold, it may be the Middle of *April*, before they will be fit for the Table.

In the Management of the Plants there muſt be Care taken to ſupply them with Water when they begin to ſhew their Flowers, otherwiſe they will fall off without producing any Fruit; and, in mild Weather, there ſhould be freſh Air admitted to them every Day; but as Fruit Trees againſt the Wall muſt be ſo treated, the ſame Management will agree with the Strawberries.

If the Strawberries are intended to be forced in a Stove, where there are Pine Apples, and no Room to plunge them in the Tan Bed, then the Plants ſhould be tranſplanted into larger Pots in *September*, that they may be well rooted before they are removed into the Stove, which ſhould not be till *December*, but if they are placed under a Frame the Beginning of *November*, where they may be ſcreened from the Froſt, it will prepare the Plants better for forcing, and thoſe who are deſirous to have them very early, make a hot Bed under Frames, upon which they place their Plants the latter End of *October*, which will bring them forward to flower, and then they remove the Plants into the Stove; when theſe Plants are removed into the Stove, they ſhould be placed near the Glaſſes, that they may enjoy as much of the Sun as poſſible, for when they are placed backward, the Plants will draw up weak, and the Flowers will drop without producing Fruit. As the Earth in the Pots will ſoon dry when they ſtand on the dry Pavement of the hot Houſe, the Plants muſt be duly watered, but it muſt be done with Diſcretion, and not too much given to them, which will be equally hurtful; if theſe Plants are properly managed, they will produce ripe Fruit in *February*, which is as early as moſt People will chooſe to eat them. When the Fruit is all gathered, the Plants ſhould be turned out of the Stove, for as they will be of no farther Service, they ſhould not remain to take up Room, nor ſhould thoſe Plants in the Borders near the hot Walls, be left there after their Fruit is gathered, but immediately taken up, that they may rob the Fruit Trees of their Nouriſhment as little as poſſible.

Where there is no Conveniency of Stoves, or hot Walls, the Fruit may be ripened on common hot Beds, and though they may not be quite ſo early as with the other Advantages, yet I have ſeen great Crops of the Fruit ripe in *April*, on common hot Beds under Frames, and done with a ſmall Expence in the following Manner.

The Plants were prepared in Pots after the Manner before directed, which were placed in a warm Situation in the Beginning of *October*, and about *Chriſtmas* the hot Bed was made, in the ſame Manner as for Cucumbers, but not ſo ſtrong, and as ſoon as the firſt violent Steam of the Dung was over, ſome old rotten Dung, laid over the hot Bed to keep down the Heat, or where it can be eaſily procured, Neats Dung is preferable for this Purpoſe; then the Pots ſhould be placed on the Bed, as cloſe together as poſſible, filling up the Interſtices between the Pots with Earth; then the Plants muſt have Air admitted to them every Day, and if the Heat of the Bed is too great, the Pots ſhould be raiſed up, to prevent their Roots being ſcorched, and if the Bed is too cold, the Sides of it ſhould be lined with ſome hot Dung; this firſt Bed will bring the Plants to flower by the Middle, or latter End of *February*, by which Time the Heat of the Bed will be ſpent, therefore another hot Bed ſhould be prepared to receive the Plants, which need not be ſo ſtrong as the firſt; but upon the hot Dung, ſhould be laid ſome Neats Dung about two Inches thick, which ſhould be equally ſpread and ſmoothed, this will prevent the Heat of the Bed from injuring the Roots of the Plants; upon this ſhould be laid two Inches of a loamy Soil; when this has lain two Days to warm, the Plants ſhould be taken out of the firſt hot Bed, and turned carefully out of the Pots, preſerving all the Earth to their Roots, and placed cloſe together upon this new hot Bed, filling up the Vacuities between the Balls, with loamy Earth, the Roots will ſoon ſtrike into this freſh Earth, which will ſtrengthen their Flowers, and cauſe their Fruit to ſet in Plenty; and if proper Care is taken to admit freſh Air to the Plants, and ſupply them properly with Water, they will have Plenty of ripe Fruit in *April*, which will be full two Months before their natural Seaſon.

The Methods practiſed to retard this Fruit, is firſt by planting them in the coldeſt Part of the Garden, where they may be as much in Shade as poſſible, and the Soil ſhould be ſtrong and cold; when there are ſuch Places in a Garden, the Fruit will be near a Month later than in a warm Situation; the next is to cut off all the Flowers when they firſt appear, and if the Seaſon proves dry, to water them plentifully which will cauſe them to put out a freſh Crop of Flowers, and if they are ſupplied with Water, there will be a late Crop of Fruit, but theſe are not ſo well flavoured as thoſe which ripen in their natural Seaſon.

In the Spring of the Year 1724, there was ſcarce any Rain from *February*, till about the Middle of *July*, ſo that moſt of the Strawberries and Raſpberries in the Gardens near *London*, were burnt up, and came to no Perfection; but upon Plenty of Rain falling in *July*, they recovered and put out Plenty of Flowers, which were ſucceeded by Fruit, which ripened in *September*, and the Markets of *London* were ſupplied with great Plenty of both thoſe Fruits at that Seaſon of the Year.

FRANGULA. *Tourn. Inſt. R. H.* 612. *Tab.* 383. *Rhamnus. Lin. G. P.* 235. Berry-bearing Alder.

The *Characters* are,

The Empalement of the Flower is of one Leaf, cut at the Top into five Segments, which are erect. The Flower hath one Petal, which is cut into five acute Segments; theſe are placed between the Segments of the Empalement, into which they are inſerted, and they are ſhorter, but ſtand erect. It hath five Stamina, which are the Length of the Petal, terminated by obtuſe Summits; in the Center is ſituated a globular Germen, ſupporting a ſlender Style, crowned by an obtuſe Stigma. The Germen afterward becomes a round Berry, incloſing two plain roundiſh Seeds.

The *Species* are,

1. FRANGULA *foliis ovato-lanceolatis glabris. Frangula* with oval, Spear-ſhaped, ſmooth Leaves. This is the *Frangula, ſive Alnus, nigra baccifera. Park. Theat.* Black Berry-bearing Alder.

2. FRANGULA *foliis lanceolatis rugoſis. Frangula* with rough Spear-ſhaped Leaves. This is the *Frangula rugoſiore & ampliore folio. Tourn.* Berry-bearing Alder with a larger and rougher Leaf.

3. FRANGULA *foliis ovatis nervoſis. Frangula* with oval veined Leaves. This is the *Frangula montana pumila ſaxatilis, folio ſubrotundo. Tourn.* Low Mountain rocky Berry-bearing Alder, with a round Leaf.

4. FRANGULA *foliis oblongo-ovatis nervoſis, glabris. Frangula* with oblong, oval, ſmooth veined Leaves. This is the *Frangula Americana foliis glabris. Dale. American* Berry-bearing Alder with ſmooth Leaves.

The firſt Sort grows naturally in the Woods in *England*, ſo is ſeldom planted in Gardens; this riſes with a woody Stem to the Height of 10 or 12 Feet, ſending out many irregular Branches, covered with a dark Bark, and garniſhed with oval Spear-ſhaped Leaves, about two Inches long, and one Inch broad, having ſeveral tranſverſe Veins from the Mid-rib to the Sides, and ſtand on ſhort Foot Stalks. The Flowers are produced in Cluſters at the End of the former Year's Shoots, alſo upon the firſt and ſecond Joints of the ſame Year's Shoot, each ſtanding upon a ſhort ſeparate Foot Stalk, on every Side the Branches; theſe are very ſmall, of an herbaceous Colour, and do not expand; they are ſucceeded by ſmall round Berries, which turn firſt red, but afterward black when ripe. The Flowers appear in *June*, and the Berries ripen in *September*; this ſtands in the Diſpenſary as a medicinal Plant, but is ſeldom uſed.

The 2d Sort hath larger rough Leaves than the firſt. It grows naturally on the *Alps*, and other mountainous Parts of *Europe*, and is preſerved in ſome Gardens for the Sake of Variety.

The 3d Sort is of humble Growth, ſeldom riſing above two Feet high; this grows on the *Pyrenean* Mountains, and is ſeldom preſerved unleſs in Botanick Gardens for Variety; it may be increaſed by laying down the Branches, but muſt have a ſtrong Soil.

The 4th Sort grows naturally in *North America*, from whence I received the Seeds; this is like the firſt Sort, but the Leaves are longer and broader; they are ſmooth, of a lucid green, and have many Veins. The Flowers are very like thoſe of the firſt Sort.

Theſe Shrubs are eaſily propagated by Seeds, which ſhould be ſown as ſoon as they are ripe, and then the Plants will come up the Spring following; but if they are kept out of the Ground till Spring, the Plants will not come up till the Year after. When the Plants come up, they muſt be kept clean from Weeds till Autumn, then they may be taken up and planted in a Nurſery, in Rows two Feet aſunder, and at one Foot Diſtance in the Rows; in this Nurſery they may remain two Years, and may then be planted where they are to remain; they may alſo be propagated by Layers and Cuttings, but the ſeedling Plants are beſt.

The Fruit of the firſt Sort is often brought into the Markets of *London*, and ſold for Buckthorn Berries; of which Cheat, all ſuch as make Syrup of Buckthorn ſhould be particularly careful; they may be eaſily diſtinguiſhed by breaking the Berries, and obſerving how many Seeds are contained in each, the Berries of this Tree having but two, and thoſe of Buckthorn generally four Seeds in each Berry.

FRAXINELLA. *See* Dictamnus.

FRAXINUS. *Lin. Gen. Plant.* 1026. *Tourn. Inſt. R. H.* 577. The Aſh Tree; in *French*, *Frêne*.

The *Characters* are,

It hath hermaphrodite and female Flowers on the ſame Tree, and ſometimes on different Trees. The hermaphrodite Flowers have no Petals, but a ſmall four pointed Empalement including two erect Stamina, which are terminated by oblong Summits, having four Furrows. In the Center is ſituated an oval compreſſed Germen, ſupporting a cylindrical Style, crowned by a bifid Stigma. The Germen becomes a compreſſed bordered Fruit, ſhaped like a Bird's Tongue, having one Cell, incloſing a Seed of the ſame Form. The female Flowers are the ſame, but have no Stamina.

The *Species* are,

1. FRAXINUS *foliolis ſerratis, floribus apetalis. Lin. Sp. Plant.* 1057. Aſh Tree whoſe ſmaller Leaves are ſerrated, and Flowers having no Petals. This is the *Fraxinus excelſior. C. B. P.* 416. The common Aſh.

2. FRAXINUS *foliolis ovato-lanceolatis ſerratis, floribus coloratis.* Aſh Tree whoſe ſmaller Leaves are oval, Spear-ſhaped, and ſawed, and the Flowers coloured. This is the *Fraxinus rotundiore folio. C. B. P.* Aſh Tree with a rounder Leaf, commonly called Manna Aſh.

3. FRAXINUS *foliolis ſerratis floribus corollatis. Lin. Sp.*

Plant. 1057. Aſh Tree whoſe ſmaller Leaves are ſawed, and Flowers have Petals. This is the *Fraxinus humilior, ſive altera Theophraſti, minore & tenuiore folio. C. B. P.* 416. Dwarf Aſh of *Theophraſtus* with ſmaller and narrower Leaves.

4. Fraxinus *foliolis lanceolatis glabris, floribus paniculatis terminatricibus.* Aſh Tree with ſmooth Spear-ſhaped Leaves, and Flowers growing in Panicles at the Ends of the Branches. This is the *Fraxinus florifera botryoides. Mor. Præl.* 265. The flowering Aſh.

5. Fraxinus *foliolis integerrimis, petiolis teretibus. Flor. Virg.* 122. Aſh Tree with the ſmall Leaves entire, and taper Foot Stalks. This is the *Fraxinus ex Novâ Angliâ, pinnis foliorum in mucronem productioribus. Rand. Cat. Hort. Chelſ. New England* Aſh with long acute Points to the Wings of the Leaves.

6. Fraxinus *foliolis lanceolatis, minimè ſerratis, petiolis teretibus pubeſcentibus.* Aſh Tree with Spear-ſhaped Leaves, very ſlightly ſawed on their Edges, and taper Foot Stalks, which are hairy. This is the *Fraxinus Caroliniana, latiore fructu. Rand. Cat. H. Chelſ. Carolina* Aſh with a broad Fruit.

The firſt Sort is the common Aſh Tree, which grows naturally in moſt Parts of *England*, and is ſo well known as to need no Deſcription. The Leaves of this Sort have generally five Pair of Lobes, and are terminated by an odd one, they are of a very dark green, and their Edges are ſlightly ſawed. The Flowers are produced in looſe Spikes from the Side of the Branches, which are ſucceeded by flat Seeds, which ripen in Autumn; there is a Variety of this with variegated Leaves which is preſerved in ſome Gardens.

The 2d Sort grows naturally in *Calabria*, and is generally ſuppoſed to be the Tree from whence the Manna is collected, which is an Exſudation from the Leaves of the Tree. The Shoots of this Tree are much ſhorter, and the Joints cloſer together than thoſe of the firſt Sort; the ſmall Leaves are ſhorter, deeper ſawed on their Edges, and are of a lighter green. The Flowers come out from the Side of the Branches, which are of a purple Colour, and appear in the Spring before the Leaves come out. This Tree is of humble Growth, ſeldom riſing more than 15 or 16 Feet in *England*.

The 3d Sort is a low Tree, which riſes about the ſame Height as the ſecond; the Leaves of this Sort are much ſmaller and narrower than thoſe of the firſt, but are ſawed on their Edges, and are of the ſame dark Colour. The Flowers of this Sort have Petals, which are wanting in the common Aſh.

The 4th Sort was raiſed by the late Dr. *Uvedale* at *Enfield*, from Seeds brought from *Italy* by Dr. *William Sherard*, where the Trees grow naturally; it was ſuppoſed to be a different Sort from that mentioned by Dr. *Morriſſon*, in his *Præludia Botanica*, but by comparing them together they appear to be the ſame.

The Leaves of this Sort have but three or four Pair of Lobes (or ſmall Leaves) which are ſhort, broad, and ſmooth, of a lucid green, and irregularly ſawed on the Edges; the Mid-rib of the great Leaf is jointed, and ſwelling where the Leaves come out. The Flowers grow in looſe Panicles at the End of the Branches; theſe are moſt of them male, having two Stamina in each, but no Germen or Style; they are of a white herbaceous Colour, and appear in *May*. As this Sort very rarely produces Seeds in *England*, it is propagated by grafting or budding it upon the common Aſh.

The 5th Sort was raiſed from Seeds, ſent from *New England* in the Year 1724, by Mr. *Moore*. The Leaves of this Tree have but three, or at moſt but four Pair of Lobes, which are placed far diſtant from each other, and are terminated by an odd Lobe, which runs out into a very long Point; they are of a light green and are entire, having no Serratures on their Edges: This Tree ſhoots into ſtrong irregular Branches, but doth not grow to a large Size in the Trunk. It is propagated by grafting it on the common Aſh.

The 6th Sort was raiſed from Seeds, ſent from *Carolina* in 1724, by Mr. *Cateſby*. The Leaves have ſeldom more than three Pair of Lobes, the lower being the leaſt, and the upper are the largeſt; theſe are about five Inches long and two broad, of a light green Colour, and ſlightly ſawed on their Edges; the Foot Stalk, or rather the Mid-rib of the Leaves is taper, and has ſhort downy Hairs; the Seeds are broader than thoſe of the common Aſh, and of a very light Colour. As this Sort hath not yet produced Seeds in *England*, it is propagated by grafting it upon the common Aſh.

Theſe Trees are now propagated in Plenty in the Nurſeries for Sale, as there has been of late Years a great Demand for all the hardy Sorts of Trees and Shrubs, which will live in the open Air; but all thoſe Trees which are grafted upon the common Aſh, are not ſo valuable as thoſe which are raiſed from Seeds, becauſe the Stock grows much faſter than the Grafts; ſo that the lower Part of the Trunk, ſo far as the Stock riſes, will often be twice the Size of the upper; and if the Trees ſtand much expoſed to the Wind, the Grafts are frequently broken off to the Stock, after they are grown to a large Size, which is a great Diſappointment to a Perſon after having waited ſeveral Years, to ſee their Trees ſuddenly deſtroyed. Beſide, if the Wood of either of the Sorts is valuable, it can be of little Uſe when the Trees are ſo raiſed.

The 4th Sort is generally planted for Ornament, the Flowers making a fine Appearance when in Beauty, and almoſt every Branch is terminated by a large looſe Pannicle; ſo that when the Trees are large, and covered with Flowers, they are ſeen at a great Diſtance.

All the other Sorts ſerve to make a Variety in Plantations, but have little Beauty to recommend them; and as their Wood ſeems to be greatly inferior to that of the common Aſh, ſo there ſhould be few of theſe planted, becauſe they will only fill up the Space where better Trees might grow.

The common Aſh propagates itſelf in Plenty by the Seeds which ſcatter in Autumn, ſo that when they happen to fall in Places where Cattle do not come, Plenty of the Plants will riſe in the Spring; but where any Perſon is deſirous to raiſe a Quantity of the Trees, the Seeds ſhould be ſown as ſoon as they are ripe, and then the Plants will come up the following Spring; but if the Seeds are kept out of the Ground till Spring, the Plants will not come up till the Year after, which is the ſame with all the Sorts of Aſh; ſo that when any of their Seeds are brought from Abroad, as they ſeldom arrive here before the Spring, the Plants muſt not be expected to appear till the next Year; therefore the Ground ſhould be kept clean all the Summer where they are ſown, and not diſturbed, leſt the Seeds ſhould be turned out of the Ground, or buried too deep to grow; for many Perſons are too impatient to wait a Year for the Growth of Seeds, ſo that if they do not come up the firſt Year, they dig up the Ground, and thereby deſtroy the Seeds.

When the Plants come up, they muſt be kept clean from Weeds during the Summer; and if they make good Progreſs in the Seed Bed, they will be fit to tranſplant by the Autumn, therefore there ſhould be ſome Ground prepared to receive them; and as ſoon as their Leaves begin to fall, they may be tranſplanted. In taking them up, there ſhould be Care taken not to break or tear off their Roots; to prevent which, they ſhould be taken up with a Spade, and not drawn up, as is frequently practiſed; for as many of the Plants which riſe firſt from Seeds, will out-ſtrip the others in their Growth, ſo it is frequently practiſed, to draw up the largeſt Plants, and leave the ſmaller to grow a Year longer before they are tranſplanted; and to avoid hurting thoſe which are left, the others are drawn out by Hand, and thereby many of their Roots are torn off or broken; therefore it is much the better Way to take all up, little or big together, and tranſplant them out, placing the large ones together in Rows, and the ſmaller by themſelves. The Rows ſhould be three Feet aſunder, and the Plants a Foot and a Half Diſtance in the Rows; in this Nurſery they may remain two Years, by which Time they will be ſtrong enough to plant where they are to remain; for the younger they are planted out, the larger they will grow; ſo that where they are deſigned to grow large, they ſhould be planted very young; and the Ground where the Plants are raiſed, ſhould not be better than that where they are deſigned to grow; for when any Plants are raiſed in good Land, and afterward tranſplanted into worſe, they very rarely thrive; ſo that it is much the beſt Method to make the Nurſery upon a Part of the ſame Land, where the Trees are deſigned to be planted, and then a ſufficient Number of the Trees may be left ſtanding upon the Ground, and theſe will out-ſtrip thoſe which are removed, and will grow to a larger Size.

Where People live in the Neighbourhood of Aſh Trees, they may ſupply themſelves with Plenty of ſelf-ſown Plants, provided Cattle are not ſuffered to graze on the Land, for they will eat off the young Plants, and not ſuffer them to grow; but where the Seeds fall in Hedges, where they are protected by Buſhes, the Plants will come up and thrive; and in theſe Hedges the Trees frequently are permitted to grow till they have deſtroyed the Hedge, for there is ſcarce any Tree ſo hurtful to all Kinds of Vegetables as the Aſh, which robs every Plant of its Nouriſhment within the Reach of its Roots, therefore ſhould never be ſuffered to grow in Hedge Rows; for they not only kill the Hedge, but impoveriſh Corn, or whatever is ſown near them. Nor ſhould any Aſh Trees be permitted to grow near Paſture Grounds, for if any of the Cows eat of the Leaves or Shoots of the Aſh, all the Butter which is made of their Milk will be rank and of no Value; which is always the Quality of the Butter made about *Guildford*, *Godalmin*, and ſome other Parts of *Surry*, where there are Aſh Trees growing about all their Paſtures, ſo that it is very rare to meet with any Butter in thoſe Places which is fit to eat; but in all the good Dairy Countries, they never ſuffer an Aſh Tree to grow.

If a Wood of theſe Trees is rightly managed, it will turn greatly to the Advantage of its Owner; for by the Under-wood, which will be fit to cut every ſeven or eight Years, there will be a continual Income more than ſufficient to pay the Rent of the Ground, and all other Charges; and ſtill there will be a Stock preſerved for Timber, which in a few Years, will be worth forty or fifty Shillings *per* Tree.

This Timber is of excellent Uſe to the Wheelwright and Cartwright for Ploughs, Axle-trees, Wheel-rings, Harrows, Bulls, Oars, Blocks for Pullies, and many other Purpoſes.

The beſt Seaſon for felling theſe Trees is from *November* to *February*; for if it be done either too early in Autumn, or too late in the Spring, the Timber will be ſubject to be infeſted with Worms, and other Inſects; but for Lopping of Pollards, the Spring is preferable for all ſoft Woods.

FRITILLARIA. *Lin. Gen. Plant.* 372. *Tourn. Inſt. R. H.* 376. *Tab.* 201. *Corona Imperialis. Tourn. Inſt. R. H.* 372. *Tab.* 197, 198. Fritillary, or Chequered Tulip and Crown Imperial.

The *Characters* are,

The Flower hath no Empalement; *it hath ſix oblong Petals, and is Bell-ſhaped, ſpreading at the Baſe*; *in the Hollow, at the Baſe of each Petal, is ſituated a Nectarium*; *the Flower hath ſix Stamina ſtanding near the Style, which are terminated by oblong four cornered Summits. In the Center is ſituated an oblong three cornered Germen, ſupporting a ſingle Style longer than the Stamina, and crowned by a ſpreading obtuſe Stigma. The Germen becomes an oblong Capſule with* 3 *Lobes, having* 3 *Cells, filled with flat Seeds ranged in a double Order.*

The Capſule of *Fritillaria* is oblong and ſmooth, but that of *Corona Imperialis* hath acute Borders, or membranaceous Wings.

Theſe two Genera of Fritillary and Crown Imperial, have been always ſeparated, till Dr. *Linnæus* joined them together; indeed, by their Flowers they may be properly enough placed in the ſame Genus; but, if their Fruit may be allowed as a characteriſtick Note, they ſhould be ſeparate; however, as this new Syſtem is generally received, ſo I ſhall, in Compliance with the preſent Taſte, join them together.

The *Species* are,

1. FRITILLARIA *foliis linearibus alternis, floribus terminalibus.* Fritillary with narrow Leaves placed alternate, and Flowers terminating the Stalk. This is the *Fritillaria præcox, purpurea, variegata. C. B. P.* 64. Early, purple, variegated, chequered Tulip.

2. FRITILLARIA *foliis infimis oppoſitis. Hort. Cliff.* 81. Fritillary whoſe lower Leaves are oppoſite. This is the *Fritillaria Aquitanica, flore luteo obſcuro. Swert. Floil. Aquitain* chequered Tulip, with an obſcure yellow Flower.

3. FRITILLARIA *floribus aſcendentibus.* Fritillary with Flowers growing above each other. This is the

Fritillaria nigra. Lob. Adver. 2. 496. Black chequered Tulip.

4. Fritillaria *foliis lanceolatis, caule unifloro maximo.* Fritillary with Spear-ſhaped Leaves, and one large Flower on each Stalk. This is the *Fritillaria lutea maxima Italica. Park. Parad.* 43. Largeſt yellow *Italian* Fritillary.

5. Fritillaria *floribus umbellatis.* Fritillary with Flowers growing in Umbels. This is the *Fritillaria umbellifera. C. B. P.* 64. Umbellated chequered Tulip.

6. Fritillaria *racemo nudiuſculo, foliis obliquis. Hort. Upſal.* 82. Fritillary with a naked Spike of Flowers and oblique Leaves. This is the *Lilium Perſicum. Dod. Pempt.* 220. The *Perſian* Lily.

7. Fritillaria *floribus racemoſis.* Fritillary with Flowers growing in Bunches. This is the *Fritillaria ramoſa, ſeu lilium Perſicum minus. Mor. Hort. Reg. Bleſ.* Branching Fritillary, or ſmaller *Perſian* Lily.

8. Fritillaria *racemo comoſo infernè nudo, foliis integerrimis. Lin. Hort. Upſal.* 82. Fritillary with a tufted Bunch of Leaves over the Flowers, which is naked below, and entire Leaves. This is the *Corona Imperialis. Dod. Pempt.* 202. Crown Imperial.

9. Fritillaria *racemo comoſo infernè nudo, foliis crenatis. Lin. Sp. Plant.* 303. Fritillary with a tufted Bunch of Leaves over the Flowers, which is naked below, and crenated Leaves. This is the *Corona regalis lilii folio crenato. Hort. Elth.* 110. Royal Crown with a crenated Lily Leaf.

The 1ſt Sort grows naturally in *Italy*, and other warm Parts of *Europe*, and from the Seeds of this there have been great Varieties raiſed in the Gardens of the Floriſts, which differ in the Size and Colour of their Flowers; as there are frequently new Varieties produced, it would be to little Purpoſe to enumerate thoſe at preſent in the *Engliſh* and *Dutch* Gardens, which amount to a great Number in the Catalogues of the *Dutch* Floriſts, who are very fond of any little Diſtinction, either in the Colour or Shape to enlarge their Liſts.

The Sorts here enumerated, I think may be allowed as diſtinct Species, notwithſtanding Dr. *Linnæus* has reduced them to three; for I have raiſed many of all the Sorts from Seed, which have conſtantly produced the ſame as the Seeds were taken from, and have only differed in the Colour or Size of the Flowers; for the Sort with broad Leaves produced the ſame Sort again, and the umbellated and ſpiked Sorts produced the ſame, though there are ſeveral Varieties in the Colours of their Flowers.

The 1ſt hath a round compreſſed Root, in Shape like that of Corn Flag, but is of a yellowiſh white Colour; the Stalk riſes about fifteen Inches high, having three or four narrow long Leaves placed alternately, and the Top is divided into two ſlender Foot Stalks which turn downward, each ſuſtaining one Bell-ſhaped inverted Flower, compoſed of ſix Petals which are chequered with purple and white like a Cheſs Board; and in the Center is ſituated a Germen ſupporting one Style, crowned by a trifid Stigma; the ſix Stamina ſtand about the Style, but are ſhorter. At the Bottom of each Petal there is a Cavity, in which is ſituated a Nectarium, filled with a ſweet Liquor; after the Flower is fallen, the Germen ſwells to a pretty large three cornered blunt Capſule, and then the Foot Stalk is turned and ſtands erect; when the Seeds are ripe, the Capſule opens in three Parts and lets out the flat Seeds, which were ranged in a double Order. The Flowers of this appear the latter End of *March* or Beginning of *April*, and the Seeds are ripe in *July*. There is a Variety of this with a double Flower.

The 2d Sort grows naturally in *France*; the Leaves of this are broader, and of a deeper green than the former; the lower Leaves are placed oppoſite, but thoſe above are alternate; the Stalk riſes a Foot and a Half high, and is terminated by two Flowers of an obſcure yellow Colour, which ſpread more at the Brim than thoſe of the firſt Sort, but are turned downward in the ſame Manner. This flowers three Weeks after the firſt. There is a Variety of this with greeniſh Flowers, which grows naturally in ſome Parts of *England.*

The 3d Sort ſeldom riſes more than a Foot high, the Leaves are narrow like thoſe of the firſt Sort, but are ſhorter; each Stalk is terminated by 3 or 4 Flowers, which riſe above each other; they are of a very dark purple, chequered with yellowiſh Spots. This flowers in *April*, about the ſame Time with the ſecond.

The 4th Sort riſes about a Foot high, the Stalk is garniſhed with Spear-ſhaped Leaves four Inches long and one broad, of a Graſs green Colour; theſe are ſometimes placed oppoſite, but are generally alternate; the Stalk is terminated by one large Bell-ſhaped Flower of a yellowiſh Colour, chequered with light purple. This Sort flowers about the ſame Time as the firſt. There are two or three Varieties of this, which differ in the Size and Colour of their Flowers and the Breadth of their Leaves, but retain their ſpecific Difference, ſo as to be eaſily diſtinguiſhed from the other Sorts.

The 5th Sort riſes a Foot and a Half high; the Stalk is garniſhed with ſhorter and broader Leaves than the firſt Sort, which are of a grayiſh Colour; the Flowers are produced round the Stalks like thoſe of the Crown Imperial; they are of a dark purple Colour, chequered with a yellowiſh green. This flowers about the ſame Time with the ſecond Sort.

The 6th Sort is commonly called the *Perſian* Lily, and is ſuppoſed to grow naturally in *Perſia*, but has been long cultivated in the *Engliſh* Gardens; the Root of this Sort is round and large, the Stalk riſes three Feet high; the lower Part of it is cloſely garniſhed with Leaves three Inches long, and half an Inch broad, of a grey Colour, ſtanding on every Side of the Stalks, but are twiſted obliquely; the Flowers grow in a looſe Spike at the Top of the Stalk, forming a Pyramid; they are ſhaped like thoſe of the other Species, but are much ſhorter, ſpread wider at their Brims, and are not bent downward like thoſe. They are of a dark purple Colour, and appear in *May*, but are ſeldom ſucceeded by Seeds in *England*, ſo are only propagated by Offſets.

The 7th Sort hath a much ſhorter Stalk than the laſt, but is garniſhed with Leaves like thoſe, only they are ſmaller; the Stalks branch out at the Top into ſeveral ſmall Foot Stalks, each ſuſtaining one dark coloured Flower. This is commonly called the ſmall *Perſian* Lily, from its Reſemblance to the former Sort.

Theſe Plants are propagated either by Seeds, or Offſets from the old Roots; by the firſt of which Methods new Varieties will be obtained, as alſo a larger Stock of Roots in three Years, than can be obtained in twenty or thirty Years in the latter Method: I ſhall therefore firſt treat of their Propagation by Seeds.

Having provided yourſelf with ſome good Seeds, ſaved from the faireſt Flowers, you muſt procure ſome ſhallow Pans or Boxes, which muſt have ſome Holes in their Bottoms to let out the Moiſture; theſe you ſhould fill with light freſh Earth, laying a few Potſheards over the Holes, to prevent the Earth from ſtopping them; then, having laid the Earth very level in the Boxes, &c. you muſt ſow the Seeds thereon pretty thick, covering it with fine ſifted Earth a Quarter of an Inch thick. The Time for ſowing the Seed is about the Beginning of *Auguſt*, for if it be kept much longer out of the Ground it will not grow; then place the Boxes or Pans where they may have the Morning Sun until eleven o'Clock, obſerving, if the Seaſon proves dry, to water them gently, as alſo to pull up all Weeds as as ſoon as they appear; for if they are ſuffered to remain until they have taken deep Root into the Earth, they would draw the Seeds out of the Ground whenever they are pulled up. Toward the latter End of *September* you ſhould remove the Boxes, &c. into a warmer Situation, placing them cloſe to a Hedge or Wall expoſed to the South; if they are ſown in Pots, theſe ſhould be plunged into the Ground, but they are beſt in Tubs; theſe ſhould be covered in ſevere Froſt. In this Situation they may remain until the Middle of *March*, by which Time the Plants will be come up an Inch high; you muſt therefore remove the Boxes as the Weather increaſes hot, into a more ſhady Situation; for while the Plants are young, they are liable to ſuffer by being too much expoſed to the Sun: And in this ſhady Situation they may remain during the Heat of the Summer, obſerving to keep them clear from Weeds, and to refreſh them now and then with a little Moiſture; but be careful not to give them much Water after their Leaves are decayed, which would rot their Roots. About the Beginning of *Auguſt*, if the Roots are very thick in the Boxes, you ſhould prepare a Bed of good light freſh Earth, which muſt be levelled very even, upon which you ſhould ſpread the Earth in the Boxes in which the ſmall Roots are contained, equally covering it about one Fourth of an Inch thick with the ſame freſh Earth: This Bed ſhould be ſituated in a warm Poſition, but not too cloſe to Hedges, Walls, or Pales, which would cauſe their Leaves to be long and ſlender, and make the Roots weaker than if placed in a more open Expoſure.

In this Bed they may remain until they flower, which is generally the third Year from ſowing; at which Time you ſhould put down a Mark to the Roots of all ſuch as produce fair Flowers, that at the Time of taking them out of the Ground (which ought to be ſoon after their green Leaves are decayed), they may be ſelected into a Bed amongſt your old Roots of this Flower, which, for their Beauty, are preſerved in the beſt Gardens; but the other leſs valuable Flowers may be planted in the Borders of the Parterre Garden for their Variety, where, being intermixed with other Flowers of different Seaſons, they will make a good Appearance.

The fine Sorts of this Flower, ſhould remain undiſturbed three Years, by which Time they will have produced many Offsets, and ſhould be taken up when their Leaves are decayed, and planted into a freſh Bed, taking ſuch of their Offsets as are large enough to produce Flowers to plant in the Flower Garden; but the ſmaller Roots may be planted into a Nurſery Bed, until they have obtained Strength enough to flower; but you muſt never ſuffer theſe Roots to lie out of the Ground when you remove them, but plant them again immediately, otherwiſe they will periſh.

During theſe three Years which I have adviſed the Roots to remain in the Beds, the Surface of the Earth ſhould be ſtirred every Autumn with a Trowel, obſerving not to go ſo deep as to bruiſe the Root, and at the ſame Time lay a thin Cover of very rotten Dung or Tanners Bark upon the Surface of the Beds; which being waſhed into the Ground, will cauſe the Flowers to be larger, as alſo the Roots to make a greater Increaſe: You muſt alſo obſerve to keep them conſtantly clear from Weeds, and thoſe Roots which you would preſerve with Care, ſhould not be ſuffered to ſeed.

When a Stock of good Flowers are obtained, they may be preſerved and increaſed as other bulbous rooted Flowers, which is by Offsets ſent out from their Roots, which ſhould be taken off every other Year from the fineſt Sorts; but the ordinary Flowers may remain three Years undiſturbed, in which Time they will have multiplied ſo much, as that each Root will have formed a Cluſter, ſo that if they are left longer together, the Roots will be ſmall, and the Flowers very weak, therefore if theſe are taken up every other Year, the Roots will be the ſtronger. Theſe Roots may be treated in the ſame Manner as Tulips, and other bulbous rooted Flowers, with this Difference only, that the Roots will not bear to be kept out of the Ground ſo long; therefore if there ſhould be a Neceſſity for keeping them out of the Ground any Time, it will beſt to put the Roots into Sand to prevent their ſhrinking.

As theſe Flowers come out early in the Spring, they make a pretty Appearance in the Borders of the Pleaſure Garden, where they are planted in ſmall Clumps; for when they ſtand ſingle in the Borders, they make but a poor Figure.

The eighth Sort is the Crown Imperial, which is now very common in the *Engliſh* Gardens. This grows naturally in *Perſia*, from whence it was firſt brought to *Conſtantinople*, and about the Year 1570, was introduced to theſe Parts of *Europe*; of this there are a great Variety of Sorts now preſerved in the Gardens of Floriſts, but as they have been produced accidentally from Seeds, they are but one Species; however, for the Satisfaction of the Curious, I ſhall here mention all the Varieties which have come to my Knowledge.

1. The common Crown Imperial; this is of a dirty red Colour.
2. The yellow Crown Imperial; this is of a bright yellow.
3. The bright red Crown Imperial; called *Fuſai*.
4. The pale yellow Crown Imperial.
5. The yellow ſtriped Crown Imperial.
6. The large flowering Crown Imperial.
7. The broad leaved late red Crown Imperial.
8. The double and triple crowned Imperial Crown.

9. The double red Crown Imperial.
10. The double yellow Crown Imperial.
11. The Silver ſtripe dleaved Crown Imperial.
12. The yellow ſtriped leaved Crown Imperial.

There are ſome few other Varieties which are mentioned in the Catalogues of the *Dutch* Floriſts, but their Diſtinctions are ſo minute, that they are not diſtinguiſhable, ſo I ſhall paſs them over, as thoſe here inſerted are all that I have ſeen growing either in *England* or *Holland*, which deſerved any Diſtinction.

The Crown Imperial hath a large round ſcaly Root of a yellow Colour, and a ſtrong Odour of a Fox; the Stalk riſes to the Height of four Feet or upward, it is ſtrong, ſucculent, and garniſhed two Thirds of the Length on every Side, with long narrow Leaves ending in Points, which are ſmooth and entire; the upper Part of the Stalk is naked, a Foot in Length; then the Flowers come out all round the Stalk upon ſhort Foot Stalks which turn downward, each ſuſtaining one large ſpreading Bell-ſhaped Flower, compoſed of ſix Spear-ſhaped Petals; at the Baſe of each Petal is a pretty large Cavity, in which is ſituated a large white Nectarium, filled with a mellous Liquor. In the Center of the Flower is fixed a three cornered oblong Germen, upon which reſts the ſingle Style, which is the Length of the Petals, and is crowned by a ſpreading obtuſe Stigma; round the Style there are ſix Awl-ſhaped Stamina which are ſhorter than the Style, and are terminated by oblong four cornered Summits. Theſe Flowers hang downward, and above them ariſes a ſpreading Tuft of green Leaves which are erect, and from between theſe come out the Foot Stalks of the Flowers; when the Flowers decay, the Germen ſwells to a large hexagonical Capſule, ſhaped like a Water Mill, having ſix Cells filled with flat Seeds. This Plant flowers the Beginning of *April*, and the Seeds are ripe in *July*.

The Sort with yellow Flowers, that with large Flowers, and thoſe with double Flowers, are the moſt valuable; but that which hath two or three Whorls of Flowers above each other, makes the fineſt Appearance; though this ſeldom produces its Flowers after this Manner the firſt Year after removing, but the ſecond and third Year after planting, the Stalks will be taller, and frequently have three Tier of Flowers one above the other, which is called the triple Crown. The Stalks of this Sort frequently run flat and broad, when they produce a greater Number of Flowers than uſual; but this is only a Luxuriancy of Nature not conſtant, though many of the Writers have mentioned it as a particular Variety.

As this is one of the earlieſt tall Flowers of the Spring, ſo it makes a fine Appearance in the Middle of large Borders, at a Seaſon when ſuch Flowers are much wanted to decorate the Pleaſure Garden; but the rank Fox-like Odour which they emit, is too ſtrong for moſt People, ſo hath rendered them leſs valuable; for there is ſomething very pleaſing in the Sight of them at a Diſtance, ſo that were it not for the offenſive Smell of Leaves and Flowers, it would be more frequently ſeen in all Gardens for Pleaſure.

This may be propagated by Seeds, or Offſets from the Root; the firſt is too tedious for moſt of the *Engliſh* Floriſts, becauſe the Plants ſo raiſed, are ſix or ſeven Years before they flower; but the *Dutch* and *Flemiſh* Gardeners, who have more Patience, frequently raiſe them from Seeds, ſo get ſome new Varieties, which rewards their Labour. The Method of propagating theſe Flowers from Seeds, being nearly the ſame as for the Tulip, the Reader is deſired to turn to that Article, where there are full Directions for it.

The common Method of propagating them here, is by Offſets from the old Roots, which will flower ſtrong the ſecond Year after they are taken off, but in order to have Plenty of theſe, the Roots ſhould not be tranſplanted oftener than every third Year, by which Time each Root will have put out ſeveral Offſets, ſome of which will be large enough to flower the following Year, ſo may be planted in the Borders of the Flower Garden to remain, and the ſmaller Roots may be planted in a Nurſery Bed to grow a Year or two according to their Size, therefore they ſhould be ſorted, and the ſmalleſt Roots planted in a Bed together, to remain there two Years, and the larger by themſelves to ſtand one Year, by which Time they will have acquired Strength enough to flower, and may then be removed into the Pleaſure Garden.

The Time for taking up theſe Roots, is in the Beginning of *July*, when their Stalks are decayed; they may be kept out of the Ground two Months, but they ſhould be laid ſingle in a dry ſhady Room, but not in Heaps, or in a moiſt Place, which will cauſe them to grow mouldy and rot. The Offſets ſhould be firſt planted, for as theſe are ſmall, they will be apt to ſhrink, if they are kept long out of the Ground.

As the Roots are large, they muſt not be planted too near other Flowers, and when planted in Beds by themſelves, they ſhould not be nearer than a Foot and a Half in the Rows, and two Feet Row from Row; they ſhould be planted ſix Inches deep at leaſt, eſpecially the ſtrong Roots; they delight in a light Soil, not too wet, nor very full of Dung; if any Dung is laid near them, it ſhould be buried two or three Inches below the Roots.

FRITILLARIA CRASSA. *See* Aſclepias.

FROST may be defined to be an exceſſive cold State of the Weather, whereby the Motion and Fluidity of the Liquors are ſuſpended; or, it is that State of the Air, &c. whereby Fluids are converted into Ice.

By Froſt Metals contract, or are ſhortened. Monſ. *Auzout* found by Experiment, that an Iron Tube twelve Feet long, upon being expoſed to the Air in a froſty Night, loſt two Lines of its Length; but this may be ſuppoſed to be wholly the Effect of Cold.

On the contrary, Froſt does not contract Fluids, but ſwells or dilates them near one Tenth of their Bulk.

Mr. *Boyle* gives us ſeveral Experiments of Veſſels made of Metals exceeding thick and ſtrong, which being filled with Water, cloſe ſtopped, and expoſed to the Cold, the Water being expanded by freezing, and not finding either Room or Vent, burſt the Veſſels.

A ſtrong Barrel of a Gun, with Water in it, being ſtopped cloſe, and frozen, was rent the whole Length; and a ſmall braſs Veſſel, five Inches deep, and two in Diameter, filled with Water, &c. and frozen, lifted up its Lid, which was preſſed with a Weight of fifty-ſix Pounds.

There are alſo related many remarable Effects of Froſt on Vegetables. *Morery, Hiſt. de France*, ſays, That Trees are frequently ſcorched and burnt up with Froſt, as with the moſt exceſſive Heat, and that even in ſo warm a Climate as *Provence*.

Mr. *Bobart* relates, That in the great Froſt, *Anno* 1683, Oaks, Aſhes, Walnut Trees, *&c.* were miſerably ſplit and cleft, ſo as they might be ſeen through, and this too with terrible Noiſes like the Exploſion of Fire Arms; that the Clefts were not only in the Bodies, but continued to the larger Boughs, Roots, *&c. Philoſ. Tranſact.* N°. 165.

Dr. *Derham* ſays, That the Froſt in 1708, was remarkable through the greateſt Part of *Europe*; and the greateſt in Degree, if not the moſt univerſal, in the Memory of Man; that it extended throughout *England, France, Germany, Denmark, Italy*, but was ſcarce felt in *Scotland* and *Ireland*. All the Orange Trees and Olives in *Italy, Provence*, &c. and all the Walnut Trees throughout *France*, with an Infinity of other Trees, periſhed by the Froſt.

Monſ. *Gouteron* ſays, They had a Gangrene on them, which he takes to be the Effect of a corroſive Salt, which corrupted and deſtroyed their Texture. He adds, That there is ſo much Reſemblance between the Gangrene befalling Plants through Froſt, and that which the Parts of Animals are liable to, that they muſt have ſome analogous Cauſe. Corroſive Humours burn the Parts of Animals, and the aereal Nitre, condenſed, has the ſame Effects on the Parts of Plants. *Memoires de l' Academie Royale de Sciences*, An. 1709.

Dr. *Derham* ſays, That the greateſt Sufferers in the Animal Kingdom were Birds and Inſects, but Vegetables were much the greateſt Sufferers; that few of the tender Sorts of Vegetables eſcaped the Severity of the Froſt; Bays, Laurel, Roſemary, Cypreſs, Alaternuſes, Phillyreas, Arbutuſes, Lauruſtinuſes, and even Furz, with moſt of the fruteſcent Herbs, as Lavenders, Abrotanums, Rue, Thyme, *&c.* were generally deſtroyed. He adds, that the Sap of the finer Wall Fruit was ſo congealed and deſtroyed, that it ſtagnated in the Limbs and Branches, and produced Diſorders like the Chilblains in human Bodies, which would turn to Mortifications in many Parts of the Trees; that the very Buds of the finer Trees, both in the Leaf Buds, and Bloſſom Buds, were quite killed, and dried into a farinaceous Matter.

Dr. *Derham* relates it as a common Obſervation, That Vegetables ſuffered more from the Sun than from the Froſt, in that the Sun-ſhine melting the Snow, and opening the Ground, left it more expoſed to the Rigour of the enſuing Night. It was likewiſe obſerved, at a Meeting of the Royal Society, That the Calamities which befel Trees, aroſe not purely from their being frozen, but principally from the Winds ſhaking and rocking them when they were frozen, which rent and parted their Fibres. *Philoſ. Tranſact.* N°. 324.

In the Year 1728-9, there was a remarkable Froſt, which continued for ſome Months, and deſtroyed a great Number of Trees and Plants in ſeveral Parts of *Europe*, a brief Account of which may not be improper to be here inſerted.

The Autumn began with cold North and Eaſt Winds, and early in *November* the Nights were generally froſty, though the Froſt did not enter the Ground deeper than the Sun thawed the following Day; but toward the End of *November* the Winds blew extremely cold from the North, which was ſucceeded by a great Snow, which fell in ſuch Quantities in one Night, as to break off large Arms, as alſo the Tops of many ever-green Trees, on which it lodged. After the Snow had fallen, it began to freeze again, the Wind continuing to blow from the North; the Days were dark and cloudy for ſome Time, but afterwards it cleared up, and the Sun appeared almoſt every Day, which melted the Snow where expoſed to it, whereby the Froſt penetrated deeper into the Ground. It was obſervable, that during theſe clear Days, a great Miſt, or Vapour, appeared in the Evenings, floating near the Surface of the Ground until the Cold of the Night came on, when it was ſuddenly condenſed, and diſappeared. About the 8th of *December*, the Nights were extremely cold; the Spirits in the Thermometer fell 18 Degrees below the freezing Point, and on the 10th of the ſame Month the Froſt was as ſevere as had been known in the Memory of Man; the Spirits of the Thermometer fell to 20 Degrees below the freezing Point. At this Time Numbers of Lauruſtinuſes, Phillyreas, Alaternuſes, Roſemary, Arbutus, and other ever-green Trees and Shrubs, began to ſuffer; eſpecially ſuch as had been trimed up to Heads with naked Stems, or clipped late in Autumn. At this Time alſo there were great Numbers of large deciduous Trees diſbarked by the Froſt, as Pear Trees, Plane Trees, Walnut Trees, and many other Sorts, and it was chiefly on the Weſt and South Weſt Side of the Trees, that the Bark came off.

About the Middle of *December* the Froſt abated of its Intenſeneſs, and ſeemed to be at a ſtand till the 23d of the ſame Month, when the Wind blew extremely ſharp and cold from the Eaſt, and the Froſt increaſed again, continuing very ſharp till the 28th Day, when it began to abate again, and ſeemed to be going off, the Wind changing to the South; but it did not continue long in this Point, before it changed to the Eaſt again, and the Froſt returned, though it was not ſo violent as before.

Thus the Weather continued for the moſt part froſty, till the Middle of *March*, with a few Intervals of mild Weather, which brought forward ſome of the early Flowers; but the Cold returning, ſoon deſtroyed them; ſo that thoſe Plants which uſually flower in *January* and *February*, did not this Year appear till *March*, and before they were fully blown, were cut off by the Froſt; of this Number were all the Spring Crocuſes, Hepaticas, *Perſian* Iriſes, Black Hellebores, Mezereons, &c.

The Cauliflower Plants which were planted out of the Beds in the open Ground, during the Intervals between the Froſt, were moſt of them deſtroyed, or ſo much cut, that they loſt moſt of their Leaves; the early Beans and Peas were moſt of them killed, and many Fruit and Forreſt Trees, which had been lately removed, were quite deſtroyed. The Loſs was very great to ſome curious Perſons, who had been many Years endeavouring to naturalize great Numbers of exotic Trees and Shrubs, abundance of which were either totally killed, or deſtroyed to the Surface of the

Ground; amongſt this Number there were many Sorts deſtroyed, which had endured the open Air many Years, without receiving the leaſt Injury from the Cold, ſuch as Paſſion Flowers, Cork Trees, Ciſtuſes, Roſemary, Stœchas, Sage, Maſtich, and ſome others. In ſome Places the young Aſh and Walnut Trees were killed; but when the Froſt went off, there appeared to have been much more Damage done in the Gardens, than there really was, which occaſioned many People to dig up and deſtroy large Quantities of Trees and Shrubs, which they ſuppoſed were killed; whereas thoſe who had more Patience, and ſuffered them to remain, fared better; for great Numbers of them ſhot out again, ſome from their Stems and Branches, and others from their Roots, the following Summer.

Nor was the Froſt more ſevere in *England*, than in other Parts of *Europe*, but on the contrary, in Compariſon, favourable; but in the Southern Parts of *France*, the Olives, Myrtles, Ciſtuſes, Alaternuſes, and ſeveral other Trees and Shrubs, which grow there almoſt ſpontaneouſly, were either deſtroyed, or killed to their Roots, and about *Paris*, and the Northern Parts of *France*, the Buds of their Fruit Trees were deſtroyed, although they remained cloſed, ſo that there were very few Bloſſoms which opened that Spring. The Fig Trees were in ſeveral Parts of *France* quite killed, and in *England* their tender Branches were deſtroyed, ſo that there was very little Fruit on thoſe Trees the following Summer, except where they were protected from the Froſt.

In *Holland* the Pines and Firs, with ſeveral other Trees, which are Natives of cold Countries, were greatly injured by the Cold; and moſt of the Trees and Shrubs, which were brought from *Italy*, *Spain*, or the South Parts of *France*, which had been planted in the full Ground in that Country, were entirely killed, though many other Sorts which had been brought from *Virginia* and *Carolina*, eſcaped very well in the ſame Gardens; but the Perſon who ſuffered moſt in that Country, was the learned Dr. *Boerhaave*, who had been ſeveral Years endeavouring to naturalize as many exotic Trees and Shrubs as he could poſſibly obtain from the ſeveral Parts of the World, great Numbers of which were entirely deſtroyed by the Froſt this Winter.

In ſome Parts of *Scotland* they not only loſt many of their curious Flowers, Plants, and Trees, but great Numbers of Sheep, and other Cattle, were buried under the Snow, where they periſhed, and many poor People, who went to look after their Cattle, were equal Sufferers with them, being buried in the Snow, which in ſome Places fell 8 or 9 Feet deep in one Night.

In the Year 1739-40, we had another ſevere Winter, which did great Miſchief to the Gardens, Fields, and Woods, the Effects of which are yet, and will be many Years, felt in *Europe*. Some Particulars of theſe Depredations, may not, perhaps, be unacceptable to the Reader, if they are here mentioned.

The Wind ſet in blowing from the North and North Eaſt about the Autumnal Equinox, and continued to blow from the ſame Quarter, with little Variation, upward of ſix Months. Early in *November* there was a continued ſharp Froſt for nine Days, in which Time the Ice upon large Ponds, and other ſtanding Waters, was frozen ſo hard as to bear Perſons who ſkated thereon; but toward the End of *November* the Froſt abated, and there was little more than ſlight Morning Froſts until *Chriſtmas* Day, when it froze pretty hard that Morning, and continued every Morning ſo to do; but on the 28th of *December*, the Wind blew with great Strength from the North Eaſt, and brought on ſevere Cold; that Night the Froſt penetrated very deep into the Ground, and the next Day, *viz.* the 29th, the Wind changed to the Southward of the Eaſt, and blew with great Fury; the Thermometer fell this Day to twenty-five Degrees below Froſt; in the Morning ſome little Snow fell, but the Violence of the Wind carried it off; the Cold ſtill increaſing, the Waters were all frozen over, and that Day it was ſo intenſe, as to freeze the Water of the River *Thames*, which was raiſed by the Force of the Wind into Ice, before it fell down again. The Wind continued to blow with the ſame Force, and from the ſame Quarter, all the 30th Day, the Cold ſtill increaſing, ſo that at this Time the Froſt penetrated into moſt of the Green-houſes in *England*, but eſpecially into all thoſe whoſe Fronts had the leaſt Inclination to the Eaſt, and ſuch of them as fronted the South Weſt eſcaped beſt, where the back Walls were of a ſufficient Thickneſs to keep out the Froſt; the Spirits in the Thermometer fell in the Night of the 30th Day to thirty-two Degrees below the freezing Point, which was lower than it had been known in *England* before; the Violence of the Wind made it very troubleſome for Perſons of the moſt robuſt Conſtitutions to be abroad, and this alſo cauſed the Froſt to penetrate through thick Walls, and in the Space of two Days, the ever-green Trees and Shrubs appeared as if they had been ſcorched by Fire, ſo that they ſeemed to have no Life; the only Trees of all the Sorts of Ever-greens which retained their Verdure, at this Time, were the *Portugal* Laurel, Savin, and ſhrubby Hartwort; theſe in the Midſt of this ſevere Froſt remained unhurt, when all the others were as brown as if they had been dead a Year; and it was very late in the Spring before any of them reſumed their uſual Verdure; during theſe ſevere Days there had but little Snow fallen, ſo that the Froſt penetrated deep in the Ground, and deſtroyed the Roots of great Part of the Vegetables, where they were not well ſecured; the Artichoke Roots were moſt of them killed in all the Kitchen Gardens; ſome few only eſcaped, theſe were ſuch as were not intended to be preſerved. A ſingle Row of theſe Roots, which were growing in a Place where a great Quantity of Dung had been wheeled over them, whereby the Ground was rendered as hard as that of a common Foot Way, though there was no Covering upon theſe Roots, yet they ſurvived the Froſt, and did well; another Parcel, which was growing near a Tan Yard, where, by accident ſome Tan had been thrown, were preſerved, ſo that from ſome of theſe Accidents we were ſo lucky as to retrieve the good Kind of Artichoke, which the *Engliſh* Gardens were ſo famous for being ſtocked with.

By the ſharp piercing Winds the Graſs was almoſt totally burned up, ſo that there was not the leaſt Verdure to be ſeen in the Fields, and in many Places the ſweeteſt and beſt Kinds of the Herbage were entirely killed, ſo that there remained only the ſtrong rough Kinds of Graſs, whereby the Paſtures were in general much damaged; but on the 31ſt Day in the Evening, the Wind being much abated, the Severity of the Froſt was not ſo great, and there ſeemed an Appearance of a Thaw on the firſt and ſecond of *January*, but on the third in the Evening the Froſt ſet in again with great Violence; and on the fourth of *January*, in the Morning, the Thermometer was fallen one Degree lower than it had been before. The ſame Morning there was the greateſt hoary Froſt, which had been ſeen, the Woods, Trees, and Hedges, appeared as if they had been covered with Snow; and although there was no Wind ſtirring, yet the Air was ſo ſharp and penetrating, as to render it difficult to endure the Cold, even with great Exerciſe.

The Timber Trees ſuffered greatly that Morning, eſpecially the Oaks, which were ſplit with great Violence; and the Noiſe in the Woods that Morning, reſembled that of great Branches breaking down in every Part of the Woods, and when heard at a Diſtance, like the Firing of Guns. This was little attended to at the Time, but the Timber which has been ſince fallen, ſufficiently proves the great Damage which the Woods then ſuſtained; nor was it here the Calamity ſtopped, for the Oaks in general had received ſo much Injury from the Froſt, as to occaſion ſuch a Weakneſs and Diſtemper among them, that the following Spring they were infeſted with Inſects to ſuch a Degree, that their Leaves were eaten and entirely deſtroyed by them; ſo that at *Midſummer* the Trees were as naked as if it had been the Beginning of *April*, and this Diſtemper continued for two Years after, almoſt as bad as at firſt, and has leſſened by Degrees, as the Trees recovered their Strength; and where they were old and weak, they have not yet got the better of this Diſtemper.

The Herbage was alſo ſo much weakened by the Severity of the Froſt, as not to be able to reſiſt the Attack made upon it by Inſects, ſo that innumerable Quantities of them were diſcovered in the Paſtures in many Parts of *Europe*, beginning firſt in the Northern Countries, and afterward ſpreading to the South; and theſe Inſects in many Places were ſo numerous, as to deſtroy the Sward of Graſs, and it is to be feared the Diſtemper which has ſo long raged among the Cattle is owing to this Cauſe, for where-ever the Diſtemper has ſpread, it has been obſerved, that Numbers of theſe Inſects have harboured about the Roots of the Graſs; and as a farther Proof of this, it has conſtantly been remarked, that, when theſe Grubs are changed into a Sort of Beetle, and take their Flight (which is commonly about the Beginning of *May*), the Diſtemper ceaſes, and when theſe Beetles have depoſited their Eggs in Autumn, the Diſtemper has raged again. Another Remark has been made, that theſe Beetles always chooſe to depoſite their Eggs not at a great Diſtance from Rivers, or large Pieces of Water, and in ſuch Places the Cattle have been moſt attacked. There might be many other Circumſtances mentioned in favour of this Opinion, as alſo the ſeveral Experiments which have been made by ſome of the Members of the Academy of Sciences at *Paris*, which are ſufficient to prove, that the Diſtemper is not infectious, nor can be communicated by the Cattle, notwithſtanding it has been treated as ſuch in many Countries, to the immenſe Loſs to the Publick of ſuch Numbers of Cattle, and their Hides; but this may require a particular Treatiſe, therefore I ſhall not enlarge farther on this Head at preſent.

The Froſt ſtill continued very hard, till toward the End of *January*, but not ſo violent as at the Beginning; for had the Wind continued to blow with ſo much Force as it had done the three firſt Days of the Froſt, for any conſiderable Time longer, there would have been few Vegetables able to have reſiſted the Cold, nor would the Animal Kingdom have fared much better; for the Cold was ſo intenſe during thoſe few Days, as to kill ſeveral of the weaker Sort of Cattle, where they were much expoſed to the Wind.

The Walnut, Aſh, and ſeveral other Trees, had moſt of their Shoots of the former Year deſtroyed, which cauſed them to be very late before they put out new Shoots the following Spring, and theſe Shoots were produced from the two and three Years Branches. The Fig Trees in many Places were killed almoſt to the Ground, eſpecially thoſe which were growing againſt the beſt aſpected Walls, for thoſe on the North and North Weſt Aſpects, as alſo the old Standard Fig Trees, eſcaped better; but all thoſe Stools and Layers of theſe Trees, which were growing in the Nurſery Gardens, were ſo much injured by the Froſt, as not to be recovered under three Years, during which Time there were ſcarce any of theſe Plants to be ſold. The Layers of Vines, as alſo of the Plane Tree, in the Nurſeries, were killed to the Ground, and the old Stools ſo much injured, that they had better have been dug up, and thrown away, than to have continued them; for in ten Years they have not recovered their former Vigour, making their Shoots ſo late in the Summer, that their Wood had not Time to harden, and the firſt Froſt in Autumn frequently kills them half Way to the Ground.

Many other deciduous Trees were equal Sufferers by this ſevere Froſt, and the Ever-greens were more generally injured, and Abundance of them killed. The Pine and Pinaſter were ſo much hurt, as to loſe all their Verdure, and in ſome Places the young Plants of the former Sort were entirely killed. The Roſemary, Lavender, Stœchas, Sage, and many other aromatick Plants, were in many Places quite deſtroyed, ſo that it was two or three Years before the Markets could be ſupplied with theſe; and in general the eſculent Plants in the Kitchen Gardens were killed, ſo that for ſome Months the Markets were not ſupplied with any Quantity of Garden Stuff. The Flower Gardens were great Sufferers by this Winter; for as the Seaſons for ſome Years before had been very temperate, few Perſons had made any Proviſion for a hard Winter, and the Cold ſetting in ſo very intenſe at the Beginning, the Miſchief was done before covering could be provided.

The Wheat in many Parts of *England*, but eſpecially in the open common Fields, was very much hurt, particularly on the Top of the Ridges, where, in ſeveral Places, there were broad naked Spaces on the Middle of the Ridges, which in the Spring appeared like ſo many Foot Paths; and as the Spring following was very dry, and the Wind continued to blow from the North and Eaſt, theſe piercing Winds entered the Ground, which had been looſened by the Froſt, and dried up the tender Roots of the Corn, to the great Prejudice of it; but ſome of the more expert Farmers, who rolled their Wheat after the Froſt was over, were well repaid by the great Crops which their Land produced.

Were I to enter into all the Particulars of the Damages ſuſtained by this ſevere Froſt in the Gardens and Fields, it would ſwell this Work beyond the Limits intended; ſo I hope, on the other Hand, I ſhall not be condemned for having inſerted thus much, ſince, by the Mention of theſe Things, Perſons may be inſtructed how to ſave many of their valuable Plants in future Winters, as alſo what Sorts are more liable to Danger from Froſts, than others.

FRUCTIFEROUS [*fructifer*, Lat.] Fruit-bearing, fruitful.

FRUIT is the Production of a Tree or Plant, for the Propagation or Multiplication of its Kind; in which Senſe Fruit includes all Kinds of Seeds, with their Furniture, *&c.* Botaniſts uſe it to ſignify, properly, that Part of a Plant wherein the Seed is contained, which the *Latins* call *Fructus*, and the *Greeks* Καρπός.

The Fruit of ſome Plants are produced ſingly, as are their Flowers, and ſometimes in Cluſters, as in moſt Fruit Trees, which are alſo fleſhy, but in many Plants they are dry.

The Word Fruit is alſo uſed to ſignify an Aſſemblage of Seeds in a Plant; as in a Pea, Bean, Ranunculus, *&c.* and in its general Signification, for all Kinds of Grain, whether naked, or incloſed in Cover, *Capſula*, or Pod, whether bony, fleſhy, ſkinny, or membraneous.

Fruit is the Product of the Flower, or that for whoſe Production, Nutrition, *&c.* the Flower is intended.

The Structure and Parts of different Fruits are different in ſome Things, but in all the Species the eſſential Parts of the Fruit appear to be only Continuations or Expanſions of thoſe which are ſeen in the other Parts of the Tree.

Dr. *Beale* ſuggeſts ſome very good Reaſons for a direct Communication between the remoteſt Parts of the Tree and the Fruit; ſo that the ſame Fibres or Stamina, which conſtitute the Root, Trunk, and Boughs, are extended into the very Fruit.

Thus, if you cut open an Apple tranſverſly, you will find it to conſiſt chiefly of four Parts, *viz.* 1ſt, a Skin, or *Cortex*, which is only a Production of the Skin or outer Bark of the Tree. 2dly, A *Parenchyma*, or Pulp, which is an Expanſion and Intumeſcence of the Blee, or inner Bark of the Tree. 3dly, The Fibres, or Ramifications of the woody Part of the Tree. 4thly, The Core, which is the Produce of the Pith, or *Medulla* of the Plant, indurated or ſtrengthened by Twigs of the Wood and Fibres inoſculated therewith. This ſerves to furniſh a Cell, or Lodge, for the Kernels, filtrates the Juice of the *Parenchyma*, and conveys it, thus prepared, to the Kernel.

Of the Fibres, Authors generally reckon fifteen Branches, of which ten penetrate the *Parenchyma*, and incline to the Baſis of the Flower; the other five aſcend more particularly from the Pedicle, or Stalk, and meet with the former at the Baſe of the Flower, to which Branches the *Capſulæ*, or Coats of the Kernels, are faſtened.

Theſe Branches, being firſt extended through the *Parenchyma* to the Flower, furniſh the neceſſary Matter for the Vegetation of it; but as the Fruit increaſes, it intercepts the Aliment, and thus the Flower is ſtarved, and falls off.

In a Pear there are five Parts to be diſtinguiſhed, *viz.* the Skin, *Parenchyma*, Ramification, Stone, and *Acetarium*.

The three firſt Parts are common to the Apple. The Stone, obſerved chiefly in Choke Pears, or Breaking Pears, is a Congeries of ſtrong Corpuſcles, that are diſperſed throughout the whole *Parenchyma*, but in the greateſt Plenty, and cloſeſt together about the Center, or *Acetarium*; it is formed of the ſtony, or calculous Part of the nutritious Juice.

The *Acetarium* is a Subſtance of a tart acid Taſte, of a globular Figure, incloſed in an Aſſemblage of ſeveral of the ſtony Parts before-mentioned.

In a Plum, Cherry, &c. there are four Parts, *viz.* a Coat, *Parenchyma*, Ramification, and *Nucleus*, or Stone. The Stone conſiſts of two very different Parts; the external, or harder Part, called the Stone, or Shell, is a Concretion of the ſtony, or calculous Parts of the nutritious Juice, like the Stone in Pears, within it. The inner, called the Kernel, is ſoft, tender, and light, being derived from the Pith, or *Medulla* of the Tree by ſeminal Branches, which penetrate the Baſe of the Stone.

The Nut, or Acorn, conſiſts of a Shell, *Cortex*, and *Medulla*; the Shell conſiſts of a Coat and *Parenchyma*, derived from the Bark and Wood of a Tree.

The *Cortex* conſiſts of an inner and outer Part, the firſt is a Duplicature of the inner Tunic of the Shell; the ſecond is a moſſy Subſtance, derived from the ſame Source as the *Parenchyma*, of the Shell. But Authors are not agreed, whether the *Medulla*, or Pulp of the Kernel does ariſe from the Pith of the Tree, or the cortical Part thereof.

Berries, as the Grape, *&c.* contain (beſides three general Parts, *viz.* Coat, *Parenchyma*, and Ramification) Grains of a ſtony Nature, to do the Offices of Seeds.

Fruits in general are ſerviceable in guarding, preſerving, and feeding the incloſed Seed, in filtrating the coarſer, more earthy, and ſtrong Parts of the nutritious Juice of the Plant, and retaining it to themſelves, ſending none but the moſt pure, elaborated, and ſpirituous Parts to the Seed, for the Support and Growth of the tender delicate Embryo, or Plantule, which is therein contained.

FRUMENTUM INDICUM. *See* Zea.

FRUTEX, a Shrub; a Vegetable of a Genus between a Tree and an Herb, but of a woody Subſtance.

It is pretty difficult to determine wherein moſt of the Writers on Gardening and Agriculture, have made the Diſtinction between Trees and Shrubs, or where to fix the Difference, or Boundary, between the Trees and Shrubs, to ſay where one ends, and the other begins, for that cannot be determined by their Growth; therefore the beſt Definition which can be made of a Shrub, to diſtinguiſh it from a Tree, is its ſending forth many Stems from the Roots, whereas the Trees have a ſingle Trunk, or Body.

FRUTEX PAVONIUS. *See* Poinciana.

FUCHSIA. *Plum. Nov. Gen.* 14. *Lin. Gen. Plant.*

1097. So named by Father *Plumier*, in Honour of *Leonard Fuchſius*, a learned Botaniſt.

The *Characters* are,

The Flower hath no Empalement; it hath one Petal, with a cloſed Tube, which is ſlightly cut into eight Parts at the Brim, ending in acute Points; it hath four Stamina the Length of the Tube, which are terminated by obtuſe Summits. The oval Germen is ſituated under the Flower, ſupporting a ſingle Style, crowned by an obtuſe Stigma. The Germen becomes a ſucculent Berry with four Furrows, having four Cells, containing ſeveral ſmall oval Seeds.

We know but one *Species* of this Genus at preſent, *viz.*

Fuchsia. *Lin. Sp. Plant.* 1191. This is the *Fuchſia triphylla, flore coccineo. Plum. Nov. Gen.* Three leaved *Fuchſia*, with a ſcarlet Flower.

This Plant is a Native in the warmeſt Parts of *America*; it was diſcovered by Father *Plumier*, in ſome of the *French* Iſlands in *America*, and was ſince found by the late Dr. *William Houſtoun*, at *Carthagena*, in *New Spain*, from whence he ſent the Seeds into *England*.

This is propagated by Seeds, ſown in Pots filled with rich light Earth, and plunged into a hot Bed of Tanners Bark, and treated in the ſame Way as other Seeds from warm Countries. In about a Month or ſix Weeks after the Seeds are ſown, the Plants will begin to appear, when they ſhould be carefully cleared from Weeds, and frequently refreſhed with Water to promote their Growth; when they are about two Inches high, they ſhould be ſhaken out of the Pots, and ſeparated carefully; then plant each into a ſmall Pot filled with light rich Earth, and plunge them again into a hot Bed of Tanners Bark, being careful to ſcreen them from the Sun, until they have taken new Root, after which Time they muſt have freſh Air admitted to them every Day in Proportion to the Warmth of the Seaſon, and ſhould be frequently watered. As the Seaſon advances and becomes warm, the Glaſſes of the hot Bed ſhould be raiſed higher, to admit a greater Share of Air to the Plants, to prevent their drawing up weak; and when they are grown ſo tall as to reach the Glaſſes, they ſhould be removed into the Bark Stove, and plunged in the Tan Bed. In Winter they require to be kept very warm, and at that Seaſon muſt not have much Water, but in Summer it muſt be often repeated.

Theſe Plants are too tender to thrive in the open Air in this Country, even in the hotteſt Part of the Year; therefore they ſhould conſtantly remain in the Stove, obſerving to let in a large Share of freſh Air in Summer, but in Winter they muſt be kept warm; with this Management the Plants will produce their Flowers, and make a beautiful Appearance in the Stove, amongſt other tender exotick Plants.

FUMARIA. *Lin. Gen. Plant.* 760. *Tourn. Inſt. R. H.* 421. *Tab.* 237. Fumatory; in *French, Fumeterre.*

The *Characters* are,

The Empalement of the Flower is compoſed of two equal Leaves placed oppoſite. The Flower is of the ringent Kind, approaching near to the Butterfly Flowers. The upper Lip is plain, obtuſe, indented at the Top, and reflexed; the Nectarium at the Baſe of this is obtuſe, and little prominent. The under Lip is like the upper in all its Parts, but the Baſe is Keel-ſhaped; the Nectarium at the Baſe is leſs prominent. The Chaps of the Flower is four cornered, obtuſe, and perpendicularly bifid; there are two equal broad Stamina in each Flower, included in the two Lips, each being terminated by three Summits. In the Center is ſituated an oblong Germen, ſupporting a ſhort Style, crowned by an orbicular compreſſed Stigma. The Germen afterward becomes a ſhort Pod with one Cell, including roundiſh Seeds.

The *Species* are,

1. Fumaria *pericarpiis monoſpermis racemoſis, caule diffuſo. Lin. Sp. Plant.* 700. Fumatory with Seed Veſſels growing in a Racemus, with a ſingle Seed, and a diffuſed Stalk. This is the *Fumaria officinarum & Dioſcoridis, flore purpureo. C. B.* 143. The common Fumatory with a purple Flower.

2. Fumaria *pericarpiis monoſpermis ſpicatis, caule erecto, foliolis filiformibus. Sauv. Monſp.* 263. Fumatory with Seed Veſſels growing in a Spike, with one Seed, an upright Stalk, and Thread-like Leaves. *Fumaria minor tenuifolia. C. B.* Leſſer narrow leaved Fumatory.

3. Fumaria *ſiliquis linearibus tetragonis, caulibus diffuſis acutangulis. Lin. Sp. Pl.* 700. Fumatory with narrow four-cornered Pods, and diffuſed Stalks, having acute Angles. *Fumaria ſempervirens & florens, flore albo. Flor. Bat.* Ever-green Fumatory with a white Flower.

4. Fumaria *ſiliquis teretibus, caulibus diffuſis, angulis obtuſis.* Fumatory with taper Pods, and diffuſed Stalks, having obtuſe Angles. This is the *Fumaria lutea. C. B.* Yellow Fumatory.

5. Fumaria *ſiliquis linearibus, foliis Cirrhiferis. Lin. Sp. Plant.* 701. Fumatory with narrow Pods, and Leaves having Claſpers. This is the *Fumaria claviculis donata. C. B. P.* 143. Fumatory with Tendrils.

6. Fumaria *pericarpiis monoſpermis racemoſis, foliis ſcandentibus ſubcirrhoſis. Lin. Sp. Plant.* 701. Fumatory with Seed Veſſels growing in a Racemus, with one Seed, and climbing Leaves, having ſhort Tendrils. This is the *Fumaria major ſcandens, flore pallidiore. Raii. Hiſt.* 405. Greater climbing Fumatory with a paler Flower.

7. Fumaria *caule ſimplici, bracteis longitudine florum. Lin. Sp. Plant.* 699. Fumatory with a ſingle Stalk, and Bracteæ as long as the Flowers. This is the *Fumaria bulboſa, radice cavâ, major. C. B. P.* 143. Greater bulbous Fumatory with a hollow Root.

8. Fumaria *caule ſimplici, bracteis brevioribus multifidis, radice ſolidâ.* Fumatory with a ſingle Stalk, ſhorter many pointed Bracteæ, and a ſolid Root. This is the *Fumaria bulboſa, radice non cavâ, major. C. B. P.* 144. Greater bulbous Fumatory with a ſolid Root.

9. Fumaria *ſcapo nudo. Hort. Cliff.* 351. Fumatory with a naked Stalk. This is the *Capnorchis Americana. Boerh. Ind. Alt.* 1. 309. and the *Fumaria tuberoſa inſipida. Cornut.* 129. Tuberous inſipid Fumatory.

10. Fumaria *ſiliquis globoſis inflatis. Hort. Upſal.* 207. Fumatory with globular inflated Pods. This is the *Cyſticapnos Africana ſcandens. Boerh. Ind. Alt.* 1. 310. Climbing *African Cyſticapnos.*

11. Fumaria *foliis triternatis, foliolis cordatis. Lin. Sp. Plant.* 700. Fumatory with Leaves compoſed of three trifoliate ſmall Leaves, which are Heart-ſhaped. This is the *Fumaria enneaphyllos Hiſpanica ſaxatilis. Bocc. Muſ.* 2. Nine leaved Rock Fumatory of *Spain.*

12. Fumaria *ſiliquis linearibus paniculatis, caule erecto. Hort. Upſal.* 207. Fumatory with narrow Pods

growing in Panicles, and an upright Stalk. This is the *Capnoides. Tourn. Inſt. R. H.* 423. Baſtard Fumatory.

The 1ſt Sort is the common Fumatory uſed in Medicine. This grows naturally on arable Land in moſt Parts of *England*; it is a low annual Plant, and flowers in *April*, *May*, *June*, and very often from Plants which riſe late in Summer, there will be a ſecond Crop in Autumn. The Juice of it is greatly commended for bilious Cholicks. It is never cultivated in Gardens.

The 2d Sort grows naturally in the South of *France*, *Spain*, and *Portugal*, but is preſerved in Botanic Gardens for Variety. It is an annual Plant, which riſes from the ſcattered Seeds better than when it is ſown with Care; the Stalks of this grow more erect, the Leaves are very finely divided, and the Flowers grow in a cloſe Spike; they are of a deep red Colour, and flower about the ſame Time as the common Sort.

The 3d Sort grows naturally on the Borders of the *Mediterranean* Sea; it was firſt brought to *England* from *Tangier*. This is a perennial Plant, ſending out from the Root many branching Stalks, which riſe about 6 or 8 Inches high, growing in Tufts or Bunches; the Leaves are very much divided, the Stalks angular, and the Flowers grow in looſe Panicles on naked Foot Stalks, which come out from the Diviſions of the Branches; they are of a whitiſh yellow Colour, and there is a Succeſſion of them moſt part of the Year.

The 4th Sort is very like the 3d, and by ſome it is ſuppoſed to be only a Variety of that, but is undoubtedly a diſtinct Species; for I have cultivated both more than thirty Years, and never yet found either of them to vary. The Stalks of this Sort have blunt Angles, whereas thoſe of the 3d are acute; they are of a purpliſh Colour, and the Flowers grow in looſer Panicles, each having a longer Foot Stalk than thoſe of the other; they are of a bright yellow Colour, and there is a Succeſſion of them great part of the Year.

Theſe 2 Sorts continue green all the Year, and except in very ſevere Froſt, are always in flower, and make a pretty Appearance; they grow beſt on Walls or Rocks, and are very proper for the Joints of Grottos, or any Rock-work; where, if a few are planted, or the Seeds ſcattered, they will multiply faſt enough from their ſcattering Seeds, which are caſt out of the Pods by the elaſtick Spring of the Valves when ripe, to a conſiderable Diſtance; and as they require no Care to cultivate them, they ſhould not be wanting in Gardens.

The 5th Sort grows in ſtony and ſandy Places, in ſome Parts of *England*; it is an annual Plant with trailing Stalks, ſending out Claſpers from the Leaves, which faſten to any of the neighbouring Plants. It flowers in *May* and *June*, but is never cultivated in Gardens.

The 6th Sort is an annual Plant with many trailing Stalks, which grow about a Foot long, ſending out a few ſhort Tendrils, whereby they faſten to any neighbouring Support; the Flowers come out from the Side of the Stalks in looſe Bunches, they are of a whitiſh herbaceous Colour, with a purple Spot on the upper Lip. This flowers in *May* and *June*. It grows in *France* and *Italy*, on ſtony Places in the Shade.

The 7th Sort grows naturally in the South of *France* and *Italy*, and was ſome Years paſt preſerved in the *Engliſh* Gardens for Ornament, but is now rarely to be found here; it was titled *Radix cava*, or hollow Root, from its having a pretty large tuberous Root hollowed in the Middle. The Stalk of this Sort riſes about ſix Inches high, and does not divide, but is garniſhed toward the Bottom with one ramous Leaf, ſomewhat like the common Fumatory, but the Lobes are broader; the Flowers grow in a Spike at the Top of the Stalk, of a pale purpliſh Colour, and appear in *May*. This Plant delights in the Shade, and is multiplied by Offſets, for it rarely ripens Seeds in *England*.

The 8th Sort is common in many of the old Gardens in *England*; it grows naturally in the South of *France*, in *Germany* and *Italy*. This hath a pretty large round ſolid Root of a yellowiſh Colour, from which come out branching Leaves like thoſe of the laſt Sort, but the Lobes are longer; the Flowers grow in Spikes on the Tops of the Stalks, they are of a purple Colour, and come out early in *April*. The Stalks of this Sort are ſingle, and riſe about 4 or 5 Inches high.

There is a Variety of this with green Flowers, which is mentioned in moſt of the Books; but all the Plants of this Sort which I have yet ſeen, are only abortive, having no real Flower, only a green Bractea, which has been generally taken for the Flowers: There is alſo mentioned a larger Sort, but if there is one really different from the common Sort, I have not ſeen it in the *Engliſh* Gardens, nor the yellow and white flowering Sorts, which are alſo mentioned in many of the Books.

The 9th Sort grows naturally in *North America*; this hath a ſcaly Root about the Size of a large Hazel Nut, from which comes out 3 or 4 Leaves on ſlender Foot Stalks; theſe are divided into 3 Parts, each of theſe Parts is compoſed of many ſmaller Diviſions, which have narrow Lobes divided into 3 Parts almoſt to the Bottom; the Flower Stalk is naked, and 8 or 9 Inches long, terminated by 4 or 5 Flowers, growing in a looſe Spike; theſe have two Petals, which are reflexed backward, and form a Sort of Fork toward the Foot Stalk, and at their Baſe are two horned Nectariums, ſtanding horizontal. The Flowers are of a dirty white Colour and appear in *May*, but rarely produce Seeds here.

This is propagated by Offſets from the Root, it loves a ſhady Situation and a light Soil; the beſt Time to tranſplant the Roots is in Autumn, when the Leaves are decayed, for it ſhoots early in the Spring, therefore it would not be ſafe to remove them at that Seaſon.

The 10th Sort grows naturally at the *Cape of Good Hope*; this is an annual Plant, with trailing Stalks which are 2 or 3 Feet long, dividing into many ſmaller, which are garniſhed with ſmall branching Leaves ſhaped like thoſe of the common Fumatory, but end with Tendrils, which claſp to any neighbouring Plants, and thereby the Stalks are ſupported; the Flowers are produced in looſe Panicles, which proceed from the Side of the Stalks; they are of a whitiſh yellow Colour, and ſucceeded by globular ſwollen Pods, in which are contained a Row of ſmall ſhining Seeds.

This is propagated by Seeds, which ſhould be ſown upon a moderate hot Bed in the Spring, and when the Plants are fit to remove, they muſt be each planted in a ſmall Pot filled with light Earth, and plunged again into the hot Bed, where they muſt be ſhaded from the Sun till they have taken new Root; after which they ſhould have a large Share of Air admitted to them at all Times in mild Weather, to prevent their drawing up weak; and as ſoon as the Seaſon is favourable, they ſhould be inured to bear the open Air, into which they may be removed the Beginning of *June*, when they may be ſhaken out of the Pots, preſerving all the Earth to their Roots, and planted in a warm Border, where their Stalks ſhould be ſupported with Sticks to prevent their trailing on the Ground; and in *July* the Plants will flower, and continue a Succeſſion of Flowers till the Froſt deſtroys the Plants; the Seeds ripen in Autumn.

The 11th Sort grows naturally upon old Walls, or rocky Places in *Spain* and *Italy*; this hath weak trailing Stalks which are much divided, and are garniſhed with ſmall Leaves divided into 3 Parts, each of which hath 3 Heart-ſhaped Lobes; the Flowers are produced in ſmall looſe Panicles from the Side of the Stalks, they are of a greeniſh white, and appear moſt of the Summer Months. It is an abiding Plant, which propagates itſelf by the Seeds that ſcatter, and thrives beſt in a ſhady Situation, and on old Walls.

The 12th Sort is an annual Plant with an upright Stalk, which grows a Foot and a Half high, round and very ſmooth, ſending out ſeveral Branches upward; theſe are garniſhed with ſmooth branching Leaves of a pale Colour, divided like the common Sort, but the ſmall Leaves are larger and more obtuſe; the Flowers are produced in looſe Panicles from the Sides of the Stalks, and at the Extremity of the Branches; they are of a pale purple, with yellow Chaps (or Lips); theſe are ſucceeded by taper narrow Pods, an Inch and a Half long, which contain many ſmall ſhining black Seeds. This flowers during the Summer Months, and the Seeds ripen in *July*, *Auguſt*, and *September*. If the Seeds are permitted to ſcatter, the Plants will come up without Trouble, and require no Care but to thin them where they are too cloſe, and keep them clean from Weeds.

Theſe Plants may be ſuffered ro grow on Walls, and in ſome abject Part of the Garden; for if they are permitted into the Borders of the Pleaſure Garden, they will ſcatter their Seeds, and become troubleſome Weeds; but they are very proper to grow on Ruins, or on the Sides of Grottos or Rock Work, where, by their long Continuance in flower, they have a good Effect.

The 5th, 6th, 7th, and 8th Sorts are propagated by Offsets, as other bulbous Roots; theſe produce their Flowers in the Beginning of *April*, and are very pretty Ornaments to Borders in a ſmall Flower Garden. They are extreme hardy, but do not increaſe very faſt, ſeldom producing Seeds with us; and their Bulbs do not multiply much, eſpecially if they are often tranſplanted. They love a light ſandy Soil, and ſhould be ſuffered to remain 3 Years undiſturbed, in which Time they will produce many Offsets. The beſt Seaſon for tranſplanting them is from *May* to *Auguſt*, when the Leaves begin to die; for if they are taken up when their Leaves are freſh, it will greatly weaken their Roots.

FURZ. *See* Geniſta.

G.

GALANTHUS. *Lin. Gen. Plant.* 362. *Narciſſo-leucoium. Tourn. Inſt. R. H.* 387. The Snow-drop; in *French*, *Perceneige*.

The *Characters* are,

The Spatha or Sheath of the Flower is oblong, blunt, and compreſſed, This opens Sideways, and becomes a dry Skin; the Flower has three oblong concave Petals, which ſpread open, and are equal; in the Bottom is ſituated the three leaved Nectarium, which is cylindrical, obtuſe, and indented at the Top; under the Flower is ſituated the oval Germen, ſupporting a ſlender Style, which is longer than the Stamina, crowned by a ſingle Stigma; this is attended by ſix ſhort hairy Stamina, terminated by oblong pointed Summits, which are gathered together. The Germen becomes an oval Capſule which is obtuſe and three cornered, opening in three Cells, which are filled with roundiſh Seeds.

This Plant, as alſo the great Snow-drop, was by Dr. *Tournefort* ranged together under the Title of *Narciſſo-leucoium*; which being a compound Name, Dr. *Linnæus* has altered it to this of *Galanthus*; and has ſeparated the great Snow-drop from this, and given the ſimple Name of *Leucoium* to that Genus.

We know but one *Species* of this Genus, *viz.*

GALANTHUS. *Lin. Hort. Cliff.* 134. The common Snow-drop. This is the *Leucoium bulboſum trifolium minus, C. B. P.* The leaſt bulbous Snow-drop with three Leaves.

There is a Variety of this with double Flowers.

Theſe Flowers are valued for their early Appearance in the Spring, for they uſually flower in *February* when the Ground is often covered with Snow. The ſingle Sort comes out the firſt, and though the Flowers are but ſmall, yet when they are in Bunches, they make a very pretty Appearance; therefore theſe Roots ſhould not be planted ſingle, as is ſometimes practiſed by Way of Edging to Borders; for when they are ſo diſpoſed, they make very little Appearance. But when there are twenty or more Roots growing in a cloſe Bunch, the Flowers have a very good Effect; and as theſe Flowers thrive well under Trees or Hedges, they are very proper to plant on the Sides of Wood Walks, and in Wilderneſs Quarters; where, if they are ſuffered to remain undiſturbed, the Roots will multiply exceedingly. The Roots may be taken up the latter End of *June*, when their Leaves decay, and may be kept out of the Ground till the End of *Auguſt*, but they muſt not be removed oftener than every third Year.

GALE. *See* Myrica.

GALEGA. *Lin. Gen. Plant.* 770. *Tourn. Inſt. R. H.* 398. *Tab.* 222. Goat's-rue.

The *Characters* are,

The Empalement of the Flower is ſhort, tubulous, and of one Leaf, indented in 5 Parts. The Flower is of the Butterfly Kind; the Standard is oval, large, and reflexed; the Wings are near the Length of the Standard; the Keel erect, oblong, and compreſſed; the under Side toward the Point is rounded, but the upper acute; there are 10 Stamina which join above their Middle, and are terminated by ſmall Summits. In the Center is ſituated a narrow, cylindrical, oblong Germen, ſupporting a ſlender Style, crowned by a Stigma terminated by a Puncture. The Germen becomes a long pointed Pod, incloſing ſeveral oblong Kidney ſhaped Seeds.

The *Species* are,

1. GALEGA *foliolis lanceolato-linearibus, ſiliquis tenuioribus.* Goat's-rue with narrow Spear-ſhaped Leaves and narrow Pods. This is the *Galega vulgaris, floribus cæruleis. C. B. P.* Common Goat's-rue with blue Flowers.

2. GALEGA *foliolis lanceolatis obtuſis, floribus ſpicatis longioribus, ſiliquis craſſioribus.* Goat's-rue with obtuſe Spear-ſhaped Leaves, Flowers growing in longer Spikes, and thicker Pods. This is the *Galega Africana, floribus majoribus ſiliquis craſſioribus. Tourn. Inſt. African* Goat's-rue, with larger Flowers and thicker Pods.

3. GALEGA *foliis ovatis, floribus paniculatis alaribus, caule fruticoſo.* Goat's-rue with oval Leaves, Flowers growing in Panicles from the Sides of the Stalks, which are ſhrubby. This is the *Galega Americana, foliis ſubrotundis, floribus coccineis. Houſt. Mſſ. American* Goat's-rue with roundiſh Leaves and ſcarlet Flowers.

The 1ſt Sort grows naturally in *Italy* and *Spain*, but is propagated in the *Engliſh* Gardens for medicinal Uſe. This hath a perennial Root, compoſed of many ſtrong Fibres, which are frequently jointed, from which ariſe many channelled hollow Stalks, from 2 to 3 Feet high, garniſhed with winged Leaves, compoſed of ſix or ſeven Pair of narrow Spear-ſhaped Lobes, terminated by an odd one, theſe are ſmooth and entire; the Flowers terminate the Stalks growing in Spikes, they are of the Pea Bloſſom Shape, of a pale blue Colour, and are diſpoſed in looſe Spikes. They appear in *June*, and are ſucceeded by taper Pods about one Inch and a Half in Length, having one Row of Kidney-ſhaped Seeds, which ripen toward the End of *Auguſt*.

There is a Variety of this with white Flowers, and another with variegated Flowers, which have accidentally been produced from Seeds, ſo are not conſtant.

The 2d Sort grows naturally in *Africa*; this differs from the former, in having larger Leaves, which are compoſed of eight or ten Pair of Lobes, broader and blunter at their Ends than thoſe of the common Sort; the Flowers are larger, and the Spikes longer; the Seed Pods are alſo much thicker than thoſe of the common Sort, but in other Reſpects are very like it.

Theſe Plants are propagated by Seeds, which may be ſown either in Spring or Autumn, upon a Bed in an open Situation; and when the Plants come up, they muſt be kept clean from Weeds till they are ſtrong enough to remove, then a Spot of Ground ſhould be prepared, in Size proportionable to the Quantity of Plants deſigned; this ſhould be well dug, and cleared from the Roots of all noxious Weeds; then the Plants ſhould be carefully taken up and planted in Rows at a Foot and a Half Diſtance, and in the Rows one Foot aſunder, obſerving to water them till they have taken new Root; after which they will require no farther Care but to keep them clean from Weeds, which may be eaſily done by hoeing the Ground frequently between the Plants, and in Spring the Ground between the Rows ſhould be dug, which will encourage their Roots, and cauſe them to ſhoot out vigorous Stalks; and if their Stalks are cut down before the Seeds are formed every Year, the Roots will continue the longer, eſpecially if they grow on a light dry Soil. The Seeds of theſe will grow where-ever they are permitted to ſcatter, ſo that Plenty of the Plants will come up without any Care, and theſe may be tranſplanted and managed in the ſame Manner as is before directed.

The 1ſt Sort is uſed in Medicine; it is accounted cordial, ſudorifick, and alexipharmick, ſo very good againſt peſtilential Diſtempers, expelling the Venom through the Pores of the Skin, and is of Uſe in all Kinds of Fevers. Mr. *Boyle*, in his Treatiſe of the *Wholeſomeneſs and Unwholeſomeneſs of the Air*, beſtows three or four Pages, in celebrating the Virtues of Goat's-rue in peſtilential and malignant Diſeaſes, from his own Obſervation and Experience.

The 3d Sort was diſcovered by the late Dr. *Houſtoun*, at *Campeachy*, from whence he ſent the Seeds into *Europe*. This Plant is propagated by Seeds, which muſt be ſown on a hot Bed early in the Spring; and when the Plants came up, and are fit to tranſplant, they muſt be tranſplanted each into a ſmall Pot, and plunged into a hot Bed of Tanners Bark, ſhading them from the Sun till they have taken new Root; then they muſt be treated as hath been directed for other tender Plants, which are kept in the Bark Stove. With this Management they will flower in *July*, and in *September* they will perfect their Seeds, but the Plants may be preſerved through the Winter in the Bark Stove.

GALENIA. *Lin. Gen. Plant.* 443. *Sherardia. Ponted. Epiſt.* 14.

The Title of this Genus was given to it by Dr. *Linnæus*, from the famous Phyſician *Galen*.

The *Characters* are,

The Flower hath a ſmall quadrifid Empalement of one Leaf; it hath no Petals, but hath eight hairy Stamina the Length of the Empalement, terminated by double Summits. In the Center is ſituated a roundiſh Germen, ſupporting two reflexed Styles, crowned by ſimple Stigmas. The Empalement afterward becomes a roundiſh Capſule with two Cells, containing two oblong angular Seeds.

We know but one *Species* of this Genus, *viz.*

GALENIA. *Hort. Cliff.* 150. Shrubby *Galenia.* This is the *Sherardia. Ponted.* and the *Artiplex Africana, lignoſa, fruteſcens, roſmarini foliis. Hort. Piſ.* 20. Shrubby *African* woody *Atriplex*, with Roſemary Leaves.

This grows naturally at the *Cape of Good Hope*, and in other Parts of *Africa*; it riſes with a ſhrubby Stalk about 4 Feet high, ſending out many weak Branches garniſhed with very narrow Leaves, placed irregularly on every Side the Branches; they are of a light green, with a Furrow running longitudinally through the Middle; the Flowers are produced in looſe Panicles, from the Side and at the End of the Branches; they are very ſmall, and have no Petals, ſo make no great Appearance. The Flowers come out in *July* and *Auguſt*, but are not ſucceeded by Seeds in *England*.

This Plant will not live through the Winter in the open Air in *England*, ſo muſt be placed in the Green-houſe with other hardy exotics, where it may have a large Share of Air in mild Weather, for it only requires protection from Froſt. In Summer it may be expoſed in the open Air, with other Plants of the ſame Country; in dry Weather it muſt be frequently watered. This may be propagated by Cuttings, which, if planted during any of the Summer Months, and watered frequently, will take Root in about five or ſix Weeks, and may then be treated as the old Plants.

GALEOPSIS. *Lin. Gen. Plant.* 637. *Tourn. Inſt. R. H.* 185. *Tab.* 86. Stinking Dead Nettle.

The *Characters* are,

The Empalement of the Flower is tubulous, of one Leaf, cut into five Parts, which end in acute Points. The Flower is of the Lip Kind, having a ſhort Tube; the Chaps are a little broader, and the Length of the Empalement; from the Baſe to the under Lip, it is on both Sides ſharply indented; the upper Lip is concave, roundiſh, and ſawed at the Top; the under Lip is trifid, the Middle Segment being the largeſt, which is crenated. It hath four Stamina incloſed in the upper Lip, two being ſhorter than the other; they are terminated by roundiſh bifid Summits. In the Center is ſituated a quadrifid Germen, ſupporting a ſlender Style, crowned by a bifid acute Stigma. The Germen afterward becomes four naked Seeds, ſitting in the rigid Empalement.

The *Species* are,

1. GALEOPSIS *internodiis caulinis æqualibus, verticillis omnibus remotis. Lin. Sp. Plant.* 579. Stinking Hedge Nettle, with equal Diſtances between the Joints, and Whorls growing at a great Diſtance. This is the *Sideritis arvenſis anguſtifolia rubra. C. B. P.* 233. Red narrow leaved Field Ironwort.

2. GALEOPSIS *internodiis supernè incraſſatis, verticillis ſummis ſubcontiguis. Lin. Sp. Plant.* 579. Stinking Hedge Nettle, whoſe Joints are thicker above, and the Whorls at the Top growing near each other. This is the *Lamium cannabino folio vulgare. Raii Syn. Ed.* 3. p. 240. Common Dead Nettle with a Hemp Leaf.

3. GALEOPSIS *corollâ flavâ, labio inferiore maculato. Flor. Lapp.* 193. Stinking Hedge Nettle with a yellow Flower, whoſe under Lip is ſpotted. This is the *Lamium cannabinum aculeatum flore luteo ſpecioſo, labiis purpureis. Pluk. Alm.* 204. Prickly Hemp Dead Nettle with a beautiful yellow Flower and purple Lips.

4. GALEOPSIS *verticillis ſexfloris, involucro tetraphyllo. Lin. Sp. Plant.* 780. Stinking Hedge Nettle with ſix Flowers in each Whorl, and a four leaved Involucrum. This is the *Galeopſis ſive urtica iners flore luteo. J. B.* 3. 323. Stinking, or Dead Nettle with a yellow Flower.

5. GALEOPSIS *verticillis bifloris, foliis oblongo-cordatis.* Stinking Hedge Nettle, with two Flowers in each Whorl, and oblong Heart-ſhaped Leaves. This is the *Galeopſis Orientalis ocimaſtri folio, flore majore flaveſcente. H. R. Par.* Eaſtern ſtinking Hedge Nettle, with an Ocimaſtrum Leaf, and a larger yellowiſh Flower.

6. GALEOPSIS *caule piloſo, calycibus labio corollæ ſuperiore longioribus. Lin. Sp. Plant.* 580. Stinking Hedge Nettle with a hairy Stalk, and the Empalement longer than the upper Lip of the Petal. This is the *Galeopſis annua Hiſpanica, rotundiore folio. Inſt. R. H.* Annual *Spaniſh* ſtinking Hedge Nettle, with a rounder Leaf.

Theſe are all of them annual Plants, except the fourth and fifth Sorts; the three firſt grow naturally in *England*. The firſt is found upon arable Land in many Places; the ſecond grows upon Dunghills, and by the Side of Paths, in moſt Parts of *England*. The third Sort grows chiefly in the Northern Countries, but I have found it growing wild in *Eſſex*, within ten Miles of *London*. Theſe Plants are ſeldom cultivated in Gardens, for if their Seeds are permitted to ſcatter, the Plants will come up as Weeds where-ever they are allowed a Place.

The fourth is a perennial Plant with a creeping Root; this grows in the Woods and under Hedges in moſt Parts of *England*. The fifth grows in the *Levant*; this is a biennial Plant, which periſhes ſoon after the Seeds are ripe. It is preſerved in Botanick Gardens for the Sake of Variety, but hath no great Beauty.

GALEOPSIS FRUTESCENS. *See* Praſium.

GALIUM. *Lin. Gen. Pl.* 117. *Tourn. Inſt.* Ladies Bedſtraw, or Cheeſe-rennet; in *French*, *Caillelait*.

The *Characters* are,

The Flower hath a ſmall Empalement indented in 4 *Parts, ſitting upon the Germen. It hath one Petal, divided into* 4 *Parts almoſt to the Bottom; and* 4 *Awl-ſhaped Stamina ſhorter than the Petal and terminated by ſingle Summits. It hath a twin Germen ſituated under the Flower, ſupporting a ſlender half bifid Style, crowned by a globular Stigma. The Germen afterward becomes two dry Berries, joined together, each incloſing a large Kidney-ſhaped Seed.*

The *Species* are,

1. GALIUM *foliis octonis linearibus ſulcatis, ramis floriferis brevibus. Hort. Cliff.* 34. Ladies Bedſtraw with eight narrow furrowed Leaves, and ſhort flowering Branches. This is the *Galium luteum. C. B. P.* 335. Yellow Ladies Bedſtraw.

2. GALIUM *foliis octonis ovatis linearibus ſubſerratis patentiſſimis mucronatis, caule flaccido, ramis patentibus. Lin. Sp. Plant.* 107. Ladies Bedſtraw with eight oval narrow Leaves, which are ſpread open, ſawed, and pointed, a weak Stalk, and ſpreading Branches. This is the *Mollugo montana latifolia ramoſa. C. B. P.* 333. Branching broad leaved Mountain *Mollugo*.

3. GALIUM *foliis verticillatis lineari-ſetaceis, pedunculis folio longioribus. Hort. Cliff.* 34. Ladies Bedſtraw, with narrow briſtly Leaves growing in Whorls, and Foot Stalks of the Flowers longer than the Leaves. This is the *Galium nigro-purpureum montanum tenuifolium. Col. Ecphr.* 1. p. 298. *C. B. P.* 335. Narrow leaved Mountain Ladies Bedſtraw, with a black purple Flower.

4. GALIUM *foliis verticillatis linearibus, pedunculis dichotomis, ſummo caule floriferis. Prod. Leyd.* 256. Ladies Bedſtraw with narrow Leaves growing in Whorls, Foot Stalks divided by Pairs, and Flowers growing at the Top of the Stalk. *Galium ſaxatile glauco folio. Bocc. Muſ.* Rock Ladies Bedſtraw with a gray Leaf.

5. GALIUM *foliis verticillatis linearibus, pedunculis breviſſimis. Hort. Cliff.* 34. Ladies Bedſtraw with narrow Leaves growing in Whorls, and ſhort Foot Stalks.

This is the *Galium rubrum. C. B. P.* 335. Red Ladies Bedſtraw.

6. Galium *foliis quaternis lanceolatis trinerviis glabris, caule erecto, ſeminibus hiſpidis. Flor. Lappon.* 60. Ladies Bedſtraw, with four ſmooth Spear-ſhaped Leaves having three Veins, an upright Stalk, and rough Seeds. This is the *Rubia pratenſis lævis acuto folio. C. B. P.* 333. Smooth Meadow Madder with an acute Reaf.

7. Galium *foliis verticillatis, lineari-lanceolatis, ramis floriferis longioribus.* Ladies Bedſtraw with narrow Spear-ſhaped Leaves growing in Whorls, and longer Branches of Flowers. This is the *Galium album vulgare. Tourn. Inſt.* Common white Ladies Bedſtraw.

8. Galium *foliis ſeptimis lineari-lanceolatis glabris, caule erecto ramoſiſſimo.* Ladies Bedſtraw with ſeven narrow ſmooth Spear-ſhaped Leaves, and an upright branching Stalk. This is the *Galium album linifolium. Barrel. Obſer.* 99. White Ladies Bedſtraw with a Flax Leaf.

9. Galium *foliis quaternis obovatis inæqualibus, caulibus diffuſis. Flor. Suec.* 119. Ladies Bedſtraw with four unequal oval Leaves, and a diffuſed Stalk. *Galium paluſtre album. C. B. P.* White Marſh Ladies Bedſtraw.

The firſt of theſe Plants (which is the Sort commonly uſed in Medicine) is very common in moiſt Meadows, and Paſture Grounds in *England*. The other Varieties are preſerved in curious Botanic Gardens, but as they are Plants of very little Beauty, and are ſubject to ſpread very far, and over-run whatever Plants grow near them, they are ſeldom cultivated in other Gardens.

Theſe Sorts may any of them be propagated by parting their Roots, which ſpread and increaſe very faſt, either in the Spring or Autumn, and will grow almoſt in any Soil or Situation, eſpecially the firſt Sort; the other Sorts require a drier Soil, but will all grow in any Situation.

GARCINIA. *Lin. G. Pl.* 526. The Mangoſteen.

The *Characters* are,

The Flower hath a three leaved Empalement, which is permanent. It hath 4 *roundiſh Petals, which ſpread open, and are larger than the Empalement. It hath* 16 *Stamina, which are erect, and form a Cylinder, terminated by roundiſh Summits. In the Center is ſituated an oval Germen, with ſcarce any Style, but is crowned by a Buckler-ſhaped plain Stigma divided into* 8 *Parts, and is permanent. The Germen becomes a thick globular Berry with one Cell, including* 8 *hairy fleſhy Seeds, which are convex and angular.*

We have but one *Species* of this Genus, *viz.*

Garcinia. *Hort. Cliff.* 182. The Mangoſtan, or Mangoſteen. This is the *Arbor peregrina aurantio ſimili fructu. Cluſ. Exot.* 12. Foreign Tree with a Fruit like the Orange.

This Tree grows naturally in the *Molucca* Iſlands, and alſo in the Inland Parts of *New Spain*, from whence I received perfect Specimens, which were ſent me by Mr. *Robert Millar*, who gathered them near *Tolu*, but did not know the Tree. It riſes with an upright Stem near 20 Feet high, ſending out many Branches on every Side, which are placed oppoſite by Pairs, and ſtand oblique to each other, and not at right Angles: the Bark of the Branches is ſmooth, of a gray Colour, but on the tender Shoots it is green, and that of the Trunk is of a darker Colour and full of Cracks: The Leaves are of the Spear-ſhape, and are entire; they are 7 or 8 Inches long, and about half ſo much Breadth in the Middle, gradually diminiſhing to both Ends; they are of a lucid green on their upper Side, and of an Olive Colour on their under, having a prominent Mid-rib, with ſeveral ſmall Veins running from that to both Sides of the Leaf. The Flower is like that of a ſingle Roſe, compoſed of 4 roundiſh Petals which are thick at their Baſe, but thinner toward their Ends; they are of a dark red Colour. The Fruit which ſucceeds the Flower is round, the Size of a middling Orange; the Top is covered by a Cap, which was the Stigma on the Top of the Style, and remains to the Top of the Fruit, and is indented in Rays to the Number of ſix or ſeven, which are obtuſe. The Shell of the Fruit is like that of the Promegranate, but ſofter, thicker, and fuller of Juice; it is green at firſt, but changes to a dark Brown with ſome yellowiſh Spots; the Inſide of the Fruit is of a Roſe Colour, and divided into ſeveral Parts by thin Partitions, as in Oranges, in which the Seeds are lodged, ſurrounded by a ſoft juicy Pulp of a delicious Flavour, partaking of the Strawberry and the Grape, and is eſteemed one of the richeſt Fruits in the World; and the Trees naturally growing in the Form of Pyrabolas, whoſe Branches are well garniſhed with large ſhining green Leaves: They have an elegant Appearance, and afford a kindly Shade in hot Countries, therefore are worthy of Cultivation, in all thoſe Countries where there is Warmth enough to ripen the Fruit.

As there are but few of the Seeds in theſe Fruit which come to Perfection (for the greateſt Part of them are abortive) ſo moſt of thoſe which have been brought to *Europe* have failed; therefore the ſureſt Way to obtain the Plants, is to ſow their Seeds in Tubs of Earth in the Country, and when the Plants have obtained Strength, they may be brought to *Europe*; but there ſhould be great Care taken in their Paſſage, to ſcreen them from Salt Water and the Spray of the Sea, as alſo not to give them much Water, eſpecially when they are in a cool or temperate Climate, for theſe Plants are very impatient of Wet. When the Plants arrive in *Europe*, they ſhould be carefully tranſplanted, each into a ſeparate Pot, filled with light Kitchen Garden Earth, and plunged into the Tan Bed, obſerving to ſhade them from the Sun till they have taken new Root; then they muſt be treated in the ſame Manner as other tender Plants from hot Countries.

GARDENS are diſtinguiſhed into Flower Gardens, Fruit Gardens, and Kitchen Gardens. The firſt, being deſigned for Pleaſure and Ornament, are to be placed in the moſt conſpicuous Parts, *i. e.* next to, or juſt againſt, the back Front of the Houſe; the two latter being principally intended for Uſe and Service, are placed leſs in Sight.

Though the Fruit and Kitchen Gardens are here mentioned as two diſtinct Gardens, and have by the *French* Gardeners, as alſo by ſome of our own Countrymen been contrived as ſuch, yet they are now uſually in one; and with good Reaſon, ſince they both require a good Soil and Expoſure, and will equally require to be placed out of the View of the Houſe. And as it will be proper to incloſe the Kitchen Garden with Walls, and to ſecure the Gates, that no Perſons may have Acceſs to it, who have no Buſineſs in it, for the Sake of preſerving the Product, ſo theſe Walls will anſwer the Purpoſes of both. Moreover, in the Diſpoſition of the Kitchen Garden, when it is properly divided into Quarters, the planting of Eſpaliers of Fruit Trees round each of the Quarters, will be of Uſe in ſcreening from the View the Kitchen Herbs growing in the Quarters; and by that Means, give an Elegancy to both Parts, and ſave beſides a great Expence. The only Objection which has been made to this of any Conſequence, is, that the Gardeners are too apt to crowd the Borders near the Walls with Kitchen Herbs, whereby the Trees are deprived of their Nouriſhment; but this is in every Gentleman's Power to redreſs, by not ſuffering the Borders to be crowded. I ſhall treat more fully of this under the Article of *Kitchen Garden.*

In the Choice of a Place to plant a Garden in, the Situation and Expoſure of the Ground are the moſt eſſential Points to be regarded; ſince, if a Failure be made in that Point, all the Care and Expence will in a Manner be loſt.

In a Garden for Pleaſure, the principal Things to be conſidered, are, 1ſt, The Situation; 2dly, The Soil, Aſpect, or Expoſure; 3dly, Water; 4thly, Proſpect.

1ſt, Situation: This ought to be ſuch an one as is wholeſome, in a Place that is neither too high nor too low; for if a Garden be too high, it will be expoſed to the Winds, which are very prejudicial to Trees; if it be too low, the Dampneſs and the Vermin, and venomous Creatures that breed in Ponds and marſhy Places, add much to their Inſalubrity.

A Situation on a riſing Ground, or on the Side of a Hill, is moſt happy, eſpecially if the Ground be not too ſteep; if the Slope be eaſy, and in a Manner imperceptible; if a good deal of Level may be had near the Houſe; and if it abounds with Springs of Water; for, being ſheltered from the Fury of the Winds, and the violent Heat of the Sun, a temperate Air will be there enjoyed; and the Water that deſcends from the Top of the Hills, either from Springs or Rain, will not only ſupply Fountains, Canals, and Caſcades, for Ornament, but when it has performed it Office, will water the adjacent Valleys, and render them fertile and wholeſome, if it be not ſuffered to ſtagnate in them.

Indeed, if the Declivity of the Hill be too ſteep, and the Water too abundant, a Garden on the Side of it may often ſuffer, by having the Trees torn up by Torrents and Floods; and the Earth above tumbling down, the Walls may be demoliſhed, and the Walks ſpoiled.

It cannot, however, be denied, that the Situation on a Plain or Flat, has ſeveral Advantages that the higher Situation has not: Floods and Rains make no Spoil; there is a continued Proſpect of Champaigns, interſected by Rivers, Ponds, Brooks, Meadows, and Hills covered with Buildings or Woods; and the level Surface is leſs tireſome to walk on, and leſs chargeable, than that on the Side of a Hill; the Terrace Walks and Steps are not neceſſary; but the greateſt Diſadvantage of flat Gardens is the Want of an extenſive Proſpect, which riſing Grounds afford.

2dly, The ſecond Thing to be conſidered in chooſing a Plat for a Garden, is a good Earth or Soil.

It is ſcarce poſſible to make a fine Garden in a bad Soil: there are indeed Ways to meliorate Ground, but they are very expenſive; and ſometimes when the Expence has been beſtowed of laying good Earth three Feet deep over the whole Surface, a whole Garden has been ruined, notwithſtanding the Expoſure has been ſoutherly and healthful, when the Roots of the Trees have come to reach the natural Bottom.

To judge of the Quality of the Soil, obſerve whether there be any Heath, Thiſtles, or ſuch like Weeds, growing ſpontaneouſly in it, for they are certain Signs that the Ground is poor. Likewiſe, if there be large Trees growing thereabouts, obſerve whether they grow crooked, ill ſhapped, and grubby, and of a faded green, and full of Moſs, or infeſted with Vermin; if ſo, the Place is to be rejected: But, on the contrary, if it be covered with good Graſs fit for Paſture, then you may be encouraged to try the Depth of the Soil.

To know this, dig Holes in ſeveral Places ſix Feet wide and four Feet deep; if you find three Feet of good Earth it will do well, but leſs than two will not be ſufficient.

The Quality of good Ground is neither to be ſtony, nor too hard to work; neither too dry nor too moiſt; nor too ſandy and light, or too ſtrong and clayey, which is the worſt of all for Gardens.

3dly, The third Requiſite is Water. The Want of this is one of the greateſt Inconveniences that can attend a Garden, and will bring a certain Mortality upon whatever is planted in it, eſpecially in the greater Droughts that often happen in a dry Situation in Summer; beſides the Uſefulneſs of it in fine Gardens, for making *Jets d'Eau*, Canals, Caſcades, *&c.* which are the greateſt Ornaments of a Garden.

4thly, The fourth Thing required in a good Situation is, the View and Proſpect of a fine Country; and though this is not ſo abſolutely neceſſary as Water, yet it is one of the moſt agreeable Beauties of a fine Garden: Beſides, if a Garden be planted in a low Place that is buried, as I may ſay, and has no Kind of Proſpect, it will be not only diſagreeable but unwholeſome, by being too much ſhaded and obſcured; as the Trees will rather retain inſalubrious Damps, than communicate the refreſhing Air, ſo purifying to vegetable Nature.

In ſhort, a Garden neceſſarily requires (beſides the Care of the Gardener) the Sun, a good Soil, a full, or at leaſt an open Proſpect, and Water, the laſt above all; and it would be egregious Folly to plant a Garden, where any of theſe are wanting.

Of the Deſigning or Manner of Laying out a Pleaſure Garden.

The Area of a handſome Garden may take up thirty or forty Acres, not more.

And as for the Diſpoſition and Diſtribution of this Garden, the following Directions may be obſerved.

1ſt, There ought always to be a Deſcent from the Houſe to the Garden not fewer than three Steps, but if there are ſix or ſeven it will be better. This Elevation of the Building will make it more dry and wholeſome, alſo from the Head of theſe Steps there will be a farther Proſpect or View of the Garden.

In a fine Garden, the firſt Thing that ſhould preſent itſelf to the Sight, ſhould be an open Lawn of Graſs, which, in Size, ſhould be proportionable to the Garden; in a large Garden, it ſhould not be leſs than ſix or eight Acres; but in middling or ſmall Gardens, the Width of it ſhould be conſiderably more than the Front of the Houſe; and if the Depth be one Half more than the Width, it will have a better Effect. The Figure of this Lawn need not be regular, and if on the Sides there are Trees planted irregularly, by Way of open Grove, ſome of which may be planted forwarder upon the Lawn than the others, whereby the Regularity of the Lawn will be broken, it will render it more like Nature, the Beauties of which ſhould always be ſtudied in the laying out and planting of Gardens; for the nearer theſe Gerdens approach to Nature, the longer they will pleaſe; for what is a Garden, but a natural Spot of Ground dreſſed and properly ornamented? There are thoſe who have erred in copying what they call Nature, as much as thoſe who have drawn a whole Garden into ſtrait Lines, great Alleys, Stars, *&c.* by bringing the rougheſt and moſt deformed Part of Nature, into their Compoſitions of Gardens: As for Inſtance, where the Ground has been naturally level, they have, at great Expence, made Hollows and raiſed Mole Hills; ſo that the Turf has been rendered not only more unpleaſant to walk upon, but much worſe to keep: And after all the Pains that have been taken to ape Nature, the whole is as eaſily diſcovered to be the Work of Art, as the ſtiffeſt Slopes and the moſt finiſhed Parterres.

The great Art in laying out Gardens, is to adapt the ſeveral Parts to the natural Poſition of the Ground, ſo as to have as little Earth to remove as poſſible; for this is often one of the greateſt Expences in making Gardens; and it may with Truth be affirmed, that where-ever this has been practiſed, nine Times in ten it has proved for the worſe; ſo that if inſtead of levelling Hills to form large Terraces, ſtiff Slopes, and even Parterres, as has been too often practiſed; or the ſinking of Hollows, and raiſing Hills, as hath by others been done; if the Surface of the Ground had only been ſmoothed and well turfed, it would have had a much better Effect, and been more generally approved than the greateſt Number of theſe Gardens, which have been made with an infinite Expence both of Time and Money.

The next Thing to be obſerved is, to contrive a dry Walk, which ſhould lead quite round the whole Garden; for as Gardens are deſigned to promote the Exerciſe of Walking, the greater the Extent of this dry Walk, the better it will anſwer the Intent; ſince in bad Weather, or in dewy Mornings and Evenings, when the Fields are unpleaſant or unſafe to walk over, theſe dry Walks in Gardens become uſeful and pleaſant; and ſuch Walks, if laid either with Gravel or Sand, may lead through the different Plantations, gently winding about in an eaſy natural Way, which will be more agreeable than thoſe long ſtrait Walks, which are too frequently ſeen in Gardens.

But as the Taſte of deſigning Gardens has of late altered from the former Method, there are many Perſons who have gone into the oppoſite Extreme; and in the forming of what they term *Serpentine Walks*, have twiſted them about in ſo many ſhort Turns, as to render it very diſagreeable to walk on them; and at the ſame Time they ſtrike the Sight with as much Stiffneſs and Appearance of Art, as any of the Methods formerly practiſed. In ſhort, the fewer Turns there are in theſe Walks, and the more they are concealed, the better they will pleaſe; and yet the Turns being eaſy, and at great Diſtances, will take off all the Appearance of Straitneſs. And here let me obſerve, that there can be no better, or more eaſy or natural Method of laying out theſe Walks, than by tracing the eaſy Turns made on a Road, where it bends by the Track of the Coach Wheels.

Theſe Walks ſhould be ſo contrived, as to lead into Shade as ſoon as poſſible; as alſo into ſome Plantations of Shrubs, where Perſons may walk in private, and be ſheltered from the Wind; for no Garden can be pleaſing, where there is Want of Shade and Shelter.

Another Thing abſolutely neceſſary is, where the Boundaries of the Garden are fenced with Walls or Pales, they ſhould be hid by Plantations of flowering Shrubs, intermixed with Laurels, and ſome other Ever-greens, which will have a good Effect, and at the ſame Time conceal the Fences, which are diſagreeable, when left naked and expoſed to the Sight.

In Situations where there is a good Supply of Water, the Deſigner has Room for adding one of the greateſt Beauties to the Garden, eſpecially if it will admit of a conſtant Stream; for in ſuch Places, if the Water is properly conducted through the Garden, it will afford infinite Pleaſure; for although theſe Streams may not be ſufficient to ſupply a large Suface, yet if theſe narrow Rivulets are judiciouſly led about the Garden, they will have a better Effect than many of the large ſtagnating Ponds or Canals, ſo frequently made in large Gardens; for where theſe Pieces of Water are large, if all the Boundaries can be ſeen from one Point of View, they cannot be eſteemed by Perſons of Judgment; and frequently theſe ſtanding Waters are brought ſo near the Houſe, as to render the Air damp and unhealthy; and many Times they are ſo ſituated, as to occaſion this Inconvenience, and at the ſame Time are not ſeen to any Advantage from the Houſe.

Where Wilderneſſes are intended, theſe ſhould not be cut into Stars or other ridiculous Figures, nor formed into Mazes or Labyrinths, which in a great Deſign is trifling, but the Walks ſhould be noble, and ſhaded by tall Trees; and the Spaces of the Quarters planted with flowering Shrubs and Ever-greens, whereby they will be rendered pleaſant at all Seaſons of the Year; and if there are hardy Sorts of Flowers (which will thrive with little Care) ſcattered about near the Sides of the Walks, they will have a very good Effect, in making a Variety of natural Beauties almoſt through the Year.

The Situation of theſe Wilderneſſes ſhould not be too near the Houſe, leſt they ſhould occaſion Damps; therefore it is much better to contrive ſome open Groves, through which there may be a Communication under Shade, from the Houſe to theſe Wilderneſſes; which are much the beſt when they are planted at the fartheſt Part of the Garden, provided they do not obſtruct the View of fine Objects.

Buildings are alſo very great Ornaments to a Garden.

if they are well deſigned and properly placed; but the modern Taſte of crowding Gardens with large uſeleſs Buildings, I preſume to think is cenſurable, with Regard as well to Propriety as Expence.

Statues and Vaſes are alſo very beautiful Objects, but theſe ſhould by no means be placed too near each other; for when ſeveral of them appear at once, they fill and confound the Eye, and loſe the beautiful Effect which they would have, if now and then one properly ſituated, engages the Sight.

What an Expence might be ſpared and applied to nobler Purpoſes, if Nature only were to be cultivated, if Simplicity were ſtudied in this delightful Art, rather than Oſtentation! For any Thing may be ſaid to be more of Nature, than what we miſcall Grandeur.

Fountains are alſo very ornamental to a Garden, if they are magnificently built, and where a conſtant Supply of Water can be obtained; but if they are meanly erected, or have not Water to keep them conſtantly running, they ſhould never be introduced into Gardens, for nothing can be more ridiculous than to ſee a dry Fountain; which, perhaps, at a great Expence, may have Water forced up, to ſupply it for an Hour or two, and no more; and this, perhaps, not in dry Seaſons, when there is a general Scarcity of Water.

The ſame may alſo be obſerved of Caſcades, and other Falls of Water, which ought never to be contrived in Gardens, where there cannot be a conſtant Run of Water; but where the Situation of a Garden is ſo happy, as to be naturally ſupplied with Water, theſe Falls and *Jets d'Eau*, may be rendered very great Beauties, eſpecially if they are well deſigned, and not made in the low mean Taſte, in which too many of thoſe now in being appear, where the Water is made to fall over a Parcel of regular Steps of Stone; but the Fall ſhould be in one Sheet from Top to Bottom, where ſhould be placed many large rough Stones to break and diſperſe the Water, and to increaſe the Noiſe of the Fall.

Where the Ground is naturally uneven, and has gentle Riſes and Falls, theſe may be ſo humoured in laying out the Ground, as to be rendered very great Beauties; but theſe Inequalities of the Ground muſt by no Means be cut into regular ſtiff Slopes, nor Amphitheatres, as has been too much the Practice: But if the Knolls are properly planted with Clumps of Trees or Shrubs, and the ſloping Sides ſmoothed and left in their natural Poſition, they will have a much better Effect, than can be given them by all the regular Angles, Lines, and flat Slopes, which have been till of late, introduced by all the Deſigners of Gardens.

The Taſte in laying out Gardens has greatly altered, and has been as greatly improved in *England*, in the Compaſs of a few Years; for, with the Revolution, the *Dutch* Taſte of laying out Gardens was introduced, which conſiſted of little more than Flower Borders laid out in ſeveral Scrolls of Box Work, clipped Ever-greens, and ſuch low expenſive Things; as alſo the Walling round, and dividing the ſeveral Parts of Gardens by croſs Walls; ſo that a Garden conſiſting of eight or ten Acres, was generally divided by Brick Walls, into three or four ſeparate Gardens; and theſe were reduced to exact Levels, having many Gravel Walks, and the Borders on each Side crowded with clipped Trees and ever-green Hedges, dividing theſe ſmall Incloſures again; ſo that the firſt making and planting of theſe ſmall Gardens was attended with a greater Expence, as was the keeping of them afterward, than Gardens of ſix Times the Extent, when deſigned after Nature.

Whether this Taſte ſo univerſally prevailed in *England*, in Complaiſance to his Majeſty King *William*, or was owing to the low grovelling Taſte of thoſe Perſons, who had the deſigning of moſt of the *Engliſh* Gardens, it is difficult to determine; but it is very certain, that the Gentlemen, at that Time, attended very little themſelves to the Diſpoſition of their Gardens, but were contented to leave the whole Direction of them to Perſons of the meaneſt Talents that ever profeſſed the Art; ſo that ſoon after, when another Taſte prevailed, theſe Gardens were almoſt totally demoliſhed, and it would have been well, if a good, that is to ſay, a natural Taſte had ſucceeded to the other; but this was not the Caſe, for though a more open and extenſive Way of laying out Gardens was introduced, yet this was little more than copying after the *French*, whoſe Taſte was in making long Avenues, ſtrait Walks, ſtiff regular Slopes, Cabinets, Fret Work, tall Hedges cut into various Shapes, *Jets d'Eau*, Fountains, *&c.* ſo that there was little of Nature ſtudied; but, on the contrary, all the geometrical Figures introduced in Wilderneſs Work, as alſo in the Parterres, and other Compartments of the Garden; nor is it ſo much to be wondered at, that this Taſte prevailed in *France*, when the Deſigns of all the principal Gardens there were formed by Architects, who were as ſtudious to have the Symmetry of the oppoſite, or correſponding Part of the Garden, as exact as the Apartments of a Habitation; nor has Length of Time, nor the Improvements already made in other Countries, amended their Taſte, or convinced them of its Abſurdity.

As the Gardens of *Verſailles*, *Marli*, and others, were extolled for their Magnificence, ſo the Plans of them were almoſt univerſally copied; the Deſigners or Imitators rather, only varying the Parts according to the Situation or Figure of the Ground; and this was practiſed for ſeveral Years, at a Time, when great Sums of Money were expended in Gardens, which might have rendered this Country the moſt beautiful of any in *Europe*, had a natural Taſte then prevailed in the deſigning of Gardens, which is the more to be lamented, as the Plantations then made, have been many of them rooted out, to make Way for the Alterations and Improvements which have been ſince introduced.

Many Perſons, I am ſenſible, will have it, that, in the Deſigns of Gardens, the Taſte ſhould alter from Time to Time as much as the Faſhion of Apparel; but theſe cannot be Perſons of Judgment, for wherever there are natural Beauties in a Country, they will always pleaſe Perſons of real Knowledge; and frequently it is obſerved, that Perſons of but little Skill in the Art of Gardening, are ſtruck with theſe Beauties without knowing the Cauſe; therefore where the beautiful Parts of Nature are juſtly imitated in Gardens, they will always be approved by judicious Perſons, let the Taſte of Gardening alter as it will.

When Trees have been long growing in a Garden, nothing can be more diſagreeable than to have them deſtroyed,

ſtroyed, to alter the Garden according to the Faſhion of the Time, becauſe it requires much Time to bring up Trees to ſuch Height as to afford Shade and Shelter; and, as Time is precious, ſo, where the Diſpoſition of the Garden is altered, there ſhould be great Attention given to the Preſervation of all the good Trees, wherever they can be either uſeful or ornamental.

There is another eſſential Part of Gardening, which cannot be too much conſidered by Perſons who deſign Gardens, which is that of adapting the ſeveral Sorts of Trees and Shrubs to the Situation and Soil of the Garden, as alſo to allow the Trees a proper Share of Room; but, however neceſſary this will appear, yet very few Perſons have made this their Study, inſomuch that when one views many modern Gardens, and ſees the great Number of Trees and Shrubs, which are crowded into them, one would be induced to believe, that private Intereſt has had a greater Influence, than any other Motive, with the Deſigners. Indeed this Fault may often be aſcribed to the Maſter, who, perhaps, is too much in Haſte for Shade and Shelter, ſo will have three or four Times the Number of Trees and Shrubs planted as ſhould have been, or that can remain long without Injury, where the Plantations ſucceed; and to this over Haſte are owing the miſerable Plantations of large Trees, ſo often ſeen in Gardens and Parks, where Trees of all Sorts, and of any Age, are taken out of Woods, Hedge Rows, *&c.* and removed at a great Expence to ſtand and decay annually, till they become ſo many dead Sticks, than which nothing can be a more diſagreeable Sight to the Owner, who, after an Expectation for ſeveral Years, attended with an Expence of Watering, Digging, and Cleaning, finds himſelf under a Neceſſity either of replanting, or giving up the Thoughts of having any. Numbers of Perſons have indeed amuſed themſelves with the Hopes of Succeſs, by ſeeing theſe new planted Trees put out Branches for a Year or two which they generally do; but in three or four Years after, inſtead of making a Progreſs, they begin to decay at the Top, and continue ſo to do gradually, until they quite periſh, which, perhaps, may not happen in eight or ten Years, eſpecially if no ſevere Winter, or very dry Summer, intervenes, either of which generally proves fatal to theſe Plantations; ſo that Perſons may be led on with Hopes, for ſo many Years, in the beſt Part of their Lives, when there is a Certainty of their failing, or at leaſt of their never increaſing in Size; but of this I ſhall treat more fully under the Article of *Planting*, and ſhall proceed.

In the Buſineſs of Deſigns, a mean and pitiful Manner ſhould be ſtudiouſly avoided, and the Aim ſhould be always at that which is noble and great, not to bring too many little Things into a Garden, nor to make ſmall Pieces of Water, narrow Walks, *&c.* eſpecially in large Gardens, for it is much better to have a few great Things, than four Times the Number of ſmall ones, which are trifling. In ſmall Gardens there is more Excuſe for this, nor indeed, would it be right, to have either large Lawns, broad Walks, or large Pieces of Water in ſuch; but yet even in theſe there ought to be a Medium, and Perſons ſhould never attempt to crowd too many Things into theſe, whereby the Whole will appear only as a mean and trifling Model of a large Garden.

Before the Deſign of a Garden is entered upon, it ought to be conſidered, what it will be in twenty or thirty Years Time, when the Trees and Shrubs are grown up, and ſpread; for it often happens, that a Deſign, which looks handſome when it is firſt planted, and in good Proportion, in Proceſs of Time becomes ſo ſmall and ridiculous, that there is a Neceſſity either of altering, or totally deſtroying it.

The general Diſtribution of a Garden, and of its Parts, ought to be accommodated to the different Situations of the Ground, for a Deſign may be very proper for a Garden on a perfect Level, which will by no Means do for one where there are great Inequalities in the Ground; ſo that as I have before intimated, the great Art of Deſigning is, in properly adapting the Deſign to the Situation, and contriving to ſave the Expence of removing Earth, to humour the Inequalities of the Ground, to proportion the Number and Sorts of Trees and Shrubs to each Part of the Garden, and to ſhut out, from the View of the Gardens, no Objects that may become ornamental.

There are, beſides theſe, many other Rules relating to the Proportions, Conformity, and Diſpoſition of the different Parts and Ornaments of Gardens, of which more may be ſeen under their ſeveral Articles.

GARIDELLA. *Tourn. Inſt. R. H.* 655. *Tab.* 430. *Lin. Gen. Plant.* 507. [So named in Honour of Dr. *Garidel*, Profeſſor of Phyſick, at *Aix*, in *Provence.*]

The *Characters* are,

The Flower hath a ſmall oblong erect Empalement of five Leaves, it hath no Petals, but five oblong equal Nectariums occupy their Place; theſe are bilabiate. The outer Part of the under Lip is bifid and plain; the interior Part of the upper Lip is ſhort and ſingle. The Flower hath eight or ten Awl-ſhaped Stamina, which are ſhorter than the Empalement, and are terminated by obtuſe erect Summits. In the Center is ſituated three Germina, which are oblong, compreſſed, and ſharp pointed, having no Styles, but crowned by ſimple Stigmas; theſe become three oblong compreſſed Capſules with two Valves, incloſing ſeveral ſmall Seeds.

We know but one *Species* of this Genus, *viz.*

GARIDELLA. *Hort. Cliff.* 170. This is the *Garidella foliis tenuiſſimè diviſis. Tourn.* Garidella with very narrow divided Leaves, and the *Nigella Cretica folio Fœniculi. C. B. P.* 146. Fennel Flower of *Crete* with a Fennel Leaf.

This Plant is very near akin to the *Nigella*, or Fennel Flower; it grows wild in *Candia*, and on Mount *Baldus*, in *Italy*, alſo in *Provence*, where it was diſcovered by Dr. *Garidel*, who ſent the Seeds to Dr. *Tournefort*, for the Royal Garden at *Paris*.

This is an annual Plant, which riſes with an upright Stalk, dividing into ſeveral ſlender Branches, which are garniſhed at their Joints with very ſlender Leaves like thoſe of Fennel. The Stalks are terminated by one ſmall Flower of a whitiſh Colour, which is ſucceeded by 3 Capſules, each containing 2 or 3 ſmall Seeds. It flowers in *June* and *July*, and the Seeds ripen in *September*. It is propagated by Seeds, which ſhould be ſown in Autumn, on a Bed, or Border of light freſh Earth, where the Plants are deſigned to remain (for they ſeldom thrive, if tranſplanted); when the Plants are come up, they muſt be carefully cleared from Weeds, and where they are too cloſe, they muſt be thinned, leaving them about four or five Inches apart; as they grow up, they muſt conſtantly be kept clear from Weeds, which, if ſuffered to grow amongſt the Plants, will ſoon overbear and deſtroy them; this is all the Culture they require, and if the Seeds are permitted to ſcatter, the Plants will come up without any farther Care.

GENERATION is, by Naturaliſts, defined to be the Act of procreating and producing a Thing which before was not; or, according to the Schoolmen, it is the total Change or Converſion of a Body into a new one, which retains no ſenſible Part or Mark of its former State.

Generation is more immediately underſtood of Animal and Vegetable Bodies from Seed, or the Coition of others of different Sexes, but of the ſame Genus or Kind.

The Generation of Plants bears a cloſe Analogy to that of ſome Animals, eſpecially ſuch as want local Motion, as Muſſels, and other immoveable Shell Fiſh, which are Hermaphrodite, and contain both the male and female Organs of Generation.

The Flower of a Plant is found to be the *Pudendum*, or principal Organ of Generation; but the Uſe of ſo much Mechaniſm, and ſo many Parts, has been but little known till of late Years.

The Flower of a Lily conſiſts of ſix *Petala*, or Flower Leaves, from the Bottom of which, in the Middle, ariſes a Kind of Tube, called, by *Tournefort*, the *Piſtillum*, and by Dr. *Linnæus* the Style; this reſts upon the Germen, which is the female Organ of Generation; round this are placed pretty fine Threads, called the Stamina, or Filaments; theſe Stamina ariſe likewiſe from the Bottom of the Flower, and terminate at the Top in little Summits, called by ſome *Apices*, which are replete with a fine Duſt, called Farina; theſe are the male Organs of Plants.

This is the general Structure of the Flowers of Plants, although they are infinite Ways diverſified, and to ſuch a Degree, that ſome have no ſenſible Piſtil, and others want the Stamina; others again have the Stamina, but want the Apices, and ſome Plants exceed all others in this, that they have no viſible Flowers; but if it be allowed, that this before-mentioned is the moſt common Structure of Flowers, it will follow, that theſe Parts that ſeem wanting are uſually only leſs apparent, or are ſituated in different Plants, or in different Parts of the ſame Plant.

The Fruit is uſually at the Baſe of the Piſtillum, ſo that, when the Piſtillum falls with the reſt of the Flower, the Fruit appears in the Stead of it, but oftentimes the Piſtillum is the Fruit itſelf, but ſtill they have both the ſame Situation in the Center of the Flower, and the Petala, or Flower Leaves, which are diſpoſed around the little Embryo, ſeem to be deſigned only to prepare a fine Juice in the little Veſſels, for the Support of it during the little Time that they laſt, and it requires; but ſome ſuppoſe the chief Uſe of them to be to defend the Piſtillum, &c.

The Apices of the Stamina are ſmall Capſulæ, or Bags, full of a Farina, or Duſt, which falls out when the Capſula grows ripe, and burſts.

Monſ. *Tournefort* ſuppoſed this Duſt to be only an Excrement of the Food of the Fruit, and the Stamina to be nothing but excretory Ducts, which filtrated this uſeleſs Matter, and thus diſcharged the Embryo; but Mr. *Morland*, Mr. *Geoffroy*, and others, find nobler Uſes for this Duſt; on their Principle the Stamina, with the Apices and Farina, make the male Part of the Plant, and the Piſtil, the female.

Mr. *Morland* ſays, It hath been long ago obſerved, that there is in every particular Seed a ſeminal Plant conveniently lodged between the two Lobes, which conſtitute the Bulk of the Seed, and are deſigned for the firſt Nouriſhment of the tender Plant.

But the admirable Dr. *Grew*, to whoſe generous Induſtry, and happy Sagacity, we are indebted for the beſt Improvements of this Part of Knowledge, is the only Author I can find, who hath obſerved that the Farina, or fine Powder, which is, at its proper Seaſon, ſhed out of thoſe *Thecæ*, or *Apices ſeminiformes* [*i. e.* Seed-forming Caſes], which grow at the Top of the Stamina, doth ſome Way perform the Office of male Sperm. But herein, I think, he falls ſhort, in that he ſuppoſes them only to drop upon the Outſide, or *Uterus*, or *Vaſculum ſeminale*, and to impregnate the included Seed by ſome ſpirituous Emanations, or energetical Impreſs.

That which is now ſubjected to the Diſquiſitions and Cenſure of ſuch whoſe exquiſite Skill doth conſtitute them Judges of ſuch Performances, is, Whether it may not be more proper to ſuppoſe, that the Seeds which are lodged in the proper Involucra, are at the firſt unimpregnated Ova (or Eggs) as of Animals; that this Farina is a Congeries of ſeminal Plants, one of which muſt be conveyed into every Ovum before it can become prolifick; that the Stylus, in Mr. *Ray*'s Language, or the upper Part of the Piſtillum, in Mr. *Tournefort*'s, is a Tube deſigned to convey theſe ſeminal Plants into their Neſts in the Ova; that there is ſo vaſt a Proviſion made, becauſe of the Odds there are, whether one, of ſo many, ſhall ever find its Way into, and through ſo narrow a Conveyance.

To make this Suppoſition the more credible, I ſhall lay down the Obſervations I have made upon the Situation of theſe Stamina, and the Stylus, in ſome few Species of Plants.

Firſt, in the *Corona Imperialis*, where the *Uterus*, or *Vaſculum ſeminale* of the Plant ſtands upon the Center of the Flower; and from the Top of this ariſeth the Stylus, the *Vaſculum ſeminale* and Stylus together repreſenting a Piſtillum.

Round this are placed ſix Stamina; upon the Ends of each of theſe are Apices, ſo artfully fixed, that they turn every Way with the leaſt Wind, being in Height almoſt equal to the Stylus about which they play, and which in this Plant is manifeſtly open at the Top, as it is hollow all the Way; to which we muſt add, that upon the Top of the Stylus there is a ſort of Tuft, conſiſting of pinguid Villi, which I imagined to be placed there to catch and detain the Farina, as it flies out of the Thecæ; from hence, I ſuppoſe, the Wind ſhakes it down the Tube, till it reach the *Vaſculum ſeminale*.

In the *Caprifolium*, or Honeyſuckle, there riſes a Stylus from the Rudiments of a Berry, into which it is inſerted, to the Top of the monopetalous Flower; from the Middle of which Flower are ſent forth ſeveral Stamina, that ſhed their Farina out of the Caſes upon the Orifice of the Stylus, which, in this Plant, is villous, or tufted, upon the ſame Account as in the former.

In *Allium*, or common Garlick, there ariſes a tricoccous Uterus, or Seed Veſſel; in the Center of which is inſerted a ſhort Stylus, not ſo high as the Apices, which thus over topping it, have the Opportunity of ſheding their Globules into an Orifice more eaſily; for which Reaſon, I can diſcern no Tuft upon this (as in the former) to inſure their Entrance, that being provided for by its Situation juſt under them.

The Reader, I hope, will excuſe me, if I preſent him now with ſome ſuch Reaſonings or Reflections as the foregoing Account doth ſuggeſt, and will ſupport; and I cannot but hope to perſuade thoſe that are candid, that I have aſſigned to the ſeveral Parts of the Flowers I have mentioned, their true and real Uſe.

For nothing can be more natural, than to conclude, that where a fine Powder is curiouſly prepared, carefully repoſited and ſhed abroad at a peculiar Seaſon, where there is a Tube ſo placed as to be fit to receive it, and ſuch Care in diſpoſing this Tube, where it doth not lie directly under the Caſes that ſhed the Powder, it hath a particular Apparatus at the End, to inſure its Entrance.

Nothing can be more genuinely deduced from any Premiſes, than it may from this, that this Powder, or ſome of it, was deſigned to enter this Tube. If theſe Stamina had been only excretory Ducts, as has been hitherto ſuppoſed, to ſeparate the groſſer Parts, and leave the Juice deſigned for the Nouriſhment of the Seed more reſerved, what Need was there to lodge theſe Excrements in ſuch curious Repoſitories? they would have been conveyed any where, rather than where there was ſo much Danger of their droping into the Seed Veſſel again, as there is here.

Again: The Tube, over the Mouth of which they are ſhed, and into which they enter, leads always directly into the Seed Veſſel.

To which we muſt add, that the Tube always begins to die when theſe Thecæ are emptied of their Contents; if they laſt any longer, it is only whilſt the Globules, which enter at their Orifice, may be ſuppoſed to have finiſhed their Paſſage. Now, can we expect a more convincing Proof of theſe Tubes being deſigned to convey theſe Globules, than that they wither when there are not more Globules to convey.

If I could now ſhew, that the Ova, or unimpregnated Seeds, are ever to be obſerved without this ſeminal Plant, the Proof would ariſe to a Demonſtration; but having not been ſo happy as to obſerve this, I ſhall content myſelf at preſent with ſuggeſting, that hence one would conclude, that the Petala of the Flower were rather deſigned to ſever ſuperfluous Juices from what was left to aſcend in the Stamina, than the Stamina to perform this Office, either for them, or the unimpregnated Semina, and obſerve the Analogy between animal and vegetable Generation, as far as was neceſſary there ſhould be an Agreement between them. I ſhall recommend the Enquiry to thoſe Gentlemen who are Maſters of the beſt Microſcopes, and Addreſs in uſing them; though, in the mean Time, I have made ſome Steps toward a Proof of this Sort, and have met with ſome ſuch Hints, as make me not deſpair of being able, in a ſhort Time, to give the World even this Satisfaction.

For, not to inſiſt upon this, that the ſeminal Plant always lies in that Part of the Seed which is always neareſt to the Inſertion of this Stylus, or ſome Propagation of it into the Seed Veſſels, I have diſcovered in Beans, Peas, and Phaſeols, juſt under one End of that we call the Eye, a manifeſt Perforation (diſcernable by the groſſer Sort of magnifying Glaſſes), which leads directly to the ſeminal Plant, and at which I ſuppoſe the ſeminal Plant did enter, and, I am apt to think, the Beans or Peas that do not thrive well, may be found deſtitute of it.

But I muſt now proceed to deſcribe ſome other Plants, whereby it will appear, that there is a particular Care always exerciſed to convey this Powder, ſo often mentioned, into a Tube, which may convey it to the Ova.

Now, in leguminous Plants, if we carefully take off the Petala of the Flower, we ſhall diſcover the Pod, or Siliqua, cloſely covered with an involving Membrane, which, about the Top, ſeparates into nine Stamina, each fraught with its Quantity of Farina, and theſe Stamina cloſely adhere to the Style, which is obſervable at the End of that Tube, which here alſo leads directly to Pod; it ſtands not upright, indeed, but ſo bent, as to make near a right Angle with it.

In Roſes there ſtands a Column, conſiſting of many Tubes cloſely clung together, though eaſily ſeparable, each leading to their particular Cell, the Stamina in a great Number placed all round about.

In *Tithymalus*, or Spurge, there riſes a Tricoccous Veſſel, that, whilſt it is ſmall, and not eaſily diſcernable, lies at the Bottom till it is impregnated, but afterwards grows up, and ſtands ſo high upon a tall Pedicle of its own, as would tempt one to think, that there were to be no Communion betwixt this and the Apices.

In the Strawberries and Raſpberries, the Hairs which grow upon the ripe Fruit (which I ſuppoſe, may be ſurpriſing to ſome,) are ſo many Tubes leading each to their particular Seed, and therefore we may obſerve, that in the firſt Opening of the Flower there ſtands a Ring of Stamina, within the Petala, and the whole inward Area appears like a little Wood of theſe Hairs or Pulp, which, when they have received and conveyed their Globules, the Seeds ſwell, and riſe in a carneous Pulp. Thus far Mr. *Morland*.

We may obſerve a Veſſel at the Bottom of the Piſtil of the Lily, which Veſſel we may call the Uterus, or Womb, in which are three Ovaries filled with little Eggs, or Rudiments of Seed found in the Ovaria, which always decay, and come to nothing, unleſs impregnated with the Farina of the ſame Plant, or ſome other of the ſame Kind; the Stamina alſo ſerve for the Conveyance of the male Seed of the Plant to be perfected in the Apices, which, when ripe, burſt forth in little Particles like Duſt; ſome of them fall into the Orifice of the Piſtil, and are either conveyed thence into the Utricle, to fecundify the female Ova, or lodged in the Piſtil, where, by their magnetick Virtue, they draw the Nouriſhment from the other Parts of the Plant into the Embryos of the Fruit, making them ſwell, grow, &c.

In Flowers that turn down, as the Cyclamen, and the Imperial Crown, the Piſtil is much longer than the Stamina, that the Duſt may fall from their Apices in ſufficient Quantities on the Piſtil, for the Buſineſs of Impregnation.

Mr. *Geoffroy* aſſures us, That in all the Obſervations he had made, the cutting off the Piſtil before it could be impregnated by the Farina, actually rendered the Plant barren for that Seaſon, and the Fruit abortive.

In many Kinds of Plants, as the Oak, Pine, Willow, &c. the Flowers, Mr. *Geoffroy* obſerves, have their Stamina and Apices, whoſe Farina may eaſily impregnate the Rudiments of the Fruit, which are not far off.

Indeed there is ſome Difficulty in reconciling this Syſtem with a certain Species of Plants, which bear Flowers without Fruit; and another Species of the ſame Kind and Denomination, which bear Fruit without Flowers; ſuch are the Palm, Hemp, Hop, Poplar, &c. which are hence diſtinguiſhed into male and female; for how ſhould the Farina of the male here, come to impregnate the Ova of the female?

This Difficulty Mr. *Geoffroy* ſolves, by ſuppoſing the Wind to be the Vehicle that conveys the male Duſt to the female Uterus, which is confirmed by an Inſtance of *Jovianus Pontanus*, of a ſingle female Palm Tree growing in a Foreſt, which never bore Fruit, till, having riſen above the other Trees of the Foreſt, and being then in a Condition to receive the Farina of the male by the Wind, it began to bear Fruit in Abundance.

As to the Manner wherein the Farina fecundifies, Mr. *Geoffroy* advances two Opinions:

Firſt, That the Farina being always found of a ſulphureous Compoſition, and full of ſubtil and penetrating Parts (as appears from its ſprightly Odour,) which, falling on the Piſtils of the Flowers, there reſolves, and the ſubtileſt Parts of it, penetrating the Subſtance of the Piſtil, excite a Fermentation, which putting the latent Juices of the young Fruit in Motion, occaſions the Parts to unfold the young Plant that is incloſed in the Embryo of the Seed.

In this Hypotheſis, the Plant in Miniature is ſuppoſed to be contained in the Seed, and to want only a proper Juice to unfold its Parts, and make them grow.

The ſecond Opinion is, That the Farina of the male Plant is the firſt Germ, or Semen of the new Plant, and ſtands in need of nothing to enable it to grow or unfold, but a ſuitable Nidus with the Juice it finds prepared in the Embryo of the Seed, or Ovary.

It may be obſerved, that theſe two Theories of vegetable Generation, bear a ſtrict Analogy to thoſe two of animal Generation, viz. either that the young Animal is in the *Semen Maſculinum*, and only ſtands in need of the Juice of the Matrix to cheriſh and bring it forth; or that the female Ovum contains the Animal, and requires only the male Seed to excite a Fermentation.

Mr. *Geoffroy* rather makes the proper Seed to be in the Farina, inaſmuch as the beſt Microſcopes do not diſcover the leaſt Appearance of any Bud in the little Embryos of the Grains, when they are examined, before the Apices have ſhed their Duſt.

In leguminous Plants, if the Petala and Stamina be removed, and the Piſtil, or that Part which becomes the Pod, be viewed with the Microſcope before the Flower be open, thoſe little green tranſparent Veſiculæ, which are to become Grains, will appear in their natural Order, yet ſtill ſhewing nothing elſe but the mere Coat, or Skin of the Grain.

If you continue to obſerve the Flowers as they advance for ſeveral Days ſucceſſively, you will find them to ſwell, and, by Degrees, to become replete with a limpid Liquor; in which, when the Farina comes to be ſhed, and the Leaves of the Flower to fall, there may be obſerved a little greeniſh Speck, or Globule, floating about at large.

There is not at firſt any Appearance of an Organization in this little Body; but, in Time, as it grows, you may begin to diſtinguiſh two little Leaves like two ſmall Horns; as the little Body grows, the Liquor diminiſhes inſenſibly, till at length the Grain becomes quite opake; and upon opening it, the Cavity will be found filled with a young Plant in Miniature, conſiſting of a little Germ, or Plantula, a little Root, and the Lobes of the Bean or Pea.

The Manner wherein this Germ, of the Apex enters the Veſicula of the Grain, is not very difficult to determine; for, beſides that the Cavity of the Piſtil reaches from the Top to the Embryos of the Grains, or thoſe Veſiculæ, have a little Aperture correſponding to the Extremity of the Cavity of the Piſtil, ſo that the ſmall Duſt, or Farina, may eaſily fall, or find an eaſy Paſſage in the Aperture in the Mouth of the Veſſels, which is the Embryo of the Grain.

The Aperture, or Cicatricula, is much the ſame in both Grains; and it is eaſily obſerved in Peas, Beans, &c. without a Microſcope.

Dr. *Patrick Blair*, treating of the *Generation of Plants*, ſays, That a vegetative Life is common to them, as well as Animals; and that the Propagation or Production of the Species is the Effect of the vegetative, not the ſenſitive Life in Animals, as well as in Plants; and that if there be a Neceſſity of the Concurrence of two different Sexes in Animals, at the begetting or generating of the Species, the ſame Neceſſity muſt be in Plants too; for as a Cow, a Mare, a Hen, a ſhe Reptile, an Inſect, &c. cannot produce an Animal without the Male, no more can it be ſuppoſed, that a Plant can produce fertile Seed without the Concurrence of the male Plant, or the male Parts of the Plant.

Mr. *Ray* ſays, That he will not deny, that both Trees and Herbs may produce Fruit, and even come to Maturity, without the male Seed being ſprinkled upon them. For though moſt Birds do not lay Eggs without Congreſs of the Male, yet the Hen often does it without copulating with the Cock, but then theſe Eggs are barren and Wind Eggs; juſt ſo, though a female Plant may produce Seed of itſelf, yet that Seed is never fertile. For,

Firſt, As the Work of Generation in Animals does not proceed from their animal or ſenſitive Life, but from their vegetative, which being the ſame as in Plants, that Operation muſt be performed after the ſame Manner in both; therefore, as there is a Neceſſity of two different Sexes in Animals, it muſt be ſo too in Plants.

Secondly, As paſſive ſeminal Matter in female Animals cannot be productive or fertile of itſelf, without being impregnated, animated, or its Particles ſet in Motion and dilated by the active Principles of the male ſeminal Matter; neither can the female Seed in Plants be rendered fertile, until it be impregnated by the *Farina fœcundans* from the male Parts of the Plants.

As to the Flowers of Plants, if they were not aſſiſting to, or if there were not ſome extraordinary Uſe from them in the Perfection of the Seed, they would not be ſo often obſerved upon Plants as they are. But ſince there is no Fruit or Seed without a previous Flower, and ſince where the one is obvious the other is conſpicuous, and ſince one is ſcarce to be obſerved with the naked Eye, neither is the other, this implies a Relation between them, that the one of them is not to be expected without the other.

It is true, there may be Flowers upon a Plant, where the Fruit is ſeldom ſeen, eſpecially in theſe Northern Climates; ſuch as the *Pervinca*, the *Nymphæa alba minima*, and ſeveral others; where the Plant exhauſts the nutritious Juice, in puſhing forth Tendrils or creeping Roots, which ſo weaken the Plants, as not to be able to bring the Fruit to Perfection; but there is no Fruit or Seed to be ſeen, unleſs a Flower has been ſent as a Meſſenger before it, to give Notice of its Approach; though it is not always upon the ſame Plant, yet it is ſtill upon ſome other Plant of the ſame Species; for the Flowers are to be ſeen upon diſtinct Plants, different Branches, or different Parts of the Branch from the Fruit, in the *Albies*, *Corylus*, *Nux Juglans*, &c. the *Mercurialis*, *Spinachia*, &c.

But the Fruit never appears, or never begins to increaſe upon theſe Plants, till the Flower is ſpent and gone; therefore they muſt ſerve for another Uſe, than to be merely ornamental; for if that were their principal Uſe, they would be always conſpicuous, which they are not for the moſt Part in apetalous Flowers; and they would always be to be ſeen, and never be hid; which is not ſo in the *Aſarum*, *Hydrocotyle*, &c. where, though the Flower is large enough in Proportion to the Fruit, yet it is not to be ſeen, unleſs the Leaf be turned up, and both Flower and Fruit be narrowly ſearched for.

The *Frumenta* and *Gramina* have their ſtamineous Flowers; yet in ſome of them the Flower is ſeldom to be ſeen, unleſs the Spike be ſhaken, and then the Apices will appear.

The *Polypodium*, and other capillary Plants, have regular Flowers, which precede the minute *Capſulæ* or Seed Veſſels, but neither of them are conſpicuous without a Microſcope.

From theſe Inſtances it appears, that Flowers are not conſtantly a Guard to preſerve the tender Embryos from the Injuries of the Air, for then the Flowers muſt always have been upon the ſame Pedicle with the Fruit.

Therefore, ſince the Appearance of the Flower is the firſt Step towards the Production of the Seed, whether both be upon the ſame Pedicle or not, it neceſſarily follows, that the one muſt contribute towards the bringing of the other to Perfection.

The Ancients taking Notice, that ſeveral Plants did produce Flowers and had no Seeds, and that other Plants of the ſame Species, and ſown from the ſame Seed, did produce the Seed without a previous Flower, they were ready to call the one male, and the other female, without any Notion that the one was aſſiſting to the other; for they looked upon ſuch Flowers to be only barren, and therefore they called thoſe which had Flowers *female*, and thoſe that produced the Fruits, *male Plants*. Thus *Mercurialis* is called *Spicata Fœmina*, and *Teſticulata Mas*. That which produces the Fruit muſt needs be the Female, as the female Animal brings forth the Fœtus; therefore the *Teſticulata* muſt needs be the Female, and the *Spicata* the Male.

Where-ever the Plants are annual, theſe with the Flowers, and ſuch as have the Seed, are always near to each other; but where the Root is perennial, and where the Plant is more frequently propagated by the Root than the Seed, the Caſe alters; for there being no Need of the Seed to propagate the Plant, there is the leſs Need of the Flower to be nearer to the Plant which produces the Seed.

So the *Bryonia* and the *Lupulus* are frequently ſeen to grow, the one to produce the Berry, and the other the ſquamous Fruit; when the Plants which produce the male Flowers of the one or the other, are at a great Diſtance. And this is ſo far from being an Objection againſt the Neceſſity of two Sexes in Plants as well as in Animals, that it is an Argument to confirm it; for it ſhews the wonderful Contrivances in order to preſerve the Species, when the ordinary Means of propagating it by the Seed cannot be ſo conveniently attained.

Theſe, and more that might be produced, being evident Proofs of two Sexes in Plants, as well as in Animals, we ſhall in the next Place, give ſome Experiments to confirm this in a negative Way, as has been already done in a poſitive.

When Plants have been deprived of their male Flowers, or male Parts in the Flower, they either produced no Seed at all, or if they did, they became abortive, dried up, or dwindled away; or though the Seeds did come to Perfection, they were barren, or did not produce.

Experiment 1. Mr. *Geoffroy* having cut off all the ſtamineous Tufts of male Flowers from the Top of the Stalk in the Maiz or *Turky* Wheat, as ſoon as they appeared, and before the Spike loaded with the Embryos of the *Semen* had put forth from the *Alæ* of the Leaves, ſeveral of theſe Embryos decayed and dried up after they were pretty big; but ſome Grains upon their Pedicles all along the Spike ſwelled conſiderably, and ſeemed to be full of the Bud, and were conſequently fertile, while all the others miſcarried, and there was not one Spike where the whole Seeds did ripen to the full.

This Experiment is a ſufficient Proof of the Uſe of the male Flowers in this Plant; for whatſoever that is which flows from the *Racemi* of theſe Flowers, it ſeems it muſt be conducive not only for the Impregnation of the Seed, but alſo for the Growth and Impregnation of the Fruit.

At preſent we ſhall ſhew, that what Nouriſhment is uſually furniſhed by the Pedicle to the Embryos, does not appear to be capable to dilate or expand itſelf, or contribute to the continual Supply of nutritious Particles, unleſs the Embryos were animated or enlivened by the Spirit which ſhould have flowed from the male Flowers; ſo that they were ſo debilitated and weakened, in aſcending from the Body of the Plant towards the Embryos, before they could arrive at them, that they, which otherwiſe might have ſerved for the Augmentation and Increaſe of all the Embryos upon the Spike, could not now do any Thing more than contribute to the ripening of a few. And although Mr. *Geoffroy* might have imagined, that theſe few Seeds which came to Perfection were fertile alſo, becauſe they were full of Germs, yet he could not be ſure of that, unleſs he had ſown the ſame Seeds next Seaſon, and tried whether they would chit or not.

Gardeners who buy Onion and Leek Seed brought from *Straſburgh*, commonly try the following Experiment: They put a few of the Seeds into a Pot of Water mixed with Earth, and if they find they begin to ſpring, or ſend forth the ſeminal Leaf or Fibre of the Root, after a few Days, they judge of the Product of it; and notwithſtanding all the Seeds without this Trial may ſeem to be productive, being equally firm, hard, and ſolid, perhaps not more than one Third of them will prove fertile.

And this Barrenneſs may proceed, either becauſe they had never been impregnated by the male Parts of the Flower, or that they had been too much expoſed to the Air; being ſome Time or other too much moiſtened, and not afterwards been carefully dried, or have been kept too long, by which Neglect they looſe their Spirit or Life.

Now, if the Fullneſs, Solidity, and Firmneſs of a Seed is not a ſure Sign of its Fertility, then Mr. *Geoffroy* might have been miſtaken in his Opinion of the Fertility of theſe Seeds in the Maiz, ſince he did not make any Trial of it, by committing it to the Ground.

In like Manner, as to his ſecond Experiment of the *Mercurialis Dioſcoridis*, where he raiſed ſome Plants which had the Fruit, and others which had the ſtamineous Flowers, and removed the floriferous Plants before the Flowers were blown, every one of the Seeds upon the fructiferous Plants, except five or ſix, miſcarried; which Seeds were ſo full, that he was perſuaded they were capable of producing new Plants, and the like was found by *Camerarius* in the *Cannabis*. Yet inaſmuch as neither of them tried the Experiment, by ſowing the ſame Seed the ſecond Year, they could not be ſure but that they might have failed in their Expectation.

Mr. *Bobart*, Overſeer of the Phyſick Garden at *Oxford*, many Years ſince, which was before the Doctrine of the different Sexes of Plants was well underſtood, being herbarizing, found a Plant of the *Lychnis ſylveſtris ſimplex*, whoſe Flowers, though they had Stamina, had no Apices; and taking Notice, that this was not only in one, but in all the Flowers upon the ſame Plant, he imagined it might be a new Species; and therefore marked the Plant, and took Care to have it preſerved till the Seeds were ripe; and then, they being full, hard, and firm, and to outward Appearance full of Germ, he ſowed them in a proper Place in the Garden the next Seaſon, but not a Plant ſprung up from them.

Theſe and other Inſtances, ſet the Opinion of the different Sexes of Plants upon another Footing than has been received by moſt of our modern Authors; for it imports, that it is not the Nouriſhment of the groſs Subſtance of the Seed itſelf which is hereby meant, nor the Increaſe of the Seed Veſſel, which is thereby deſigned; for (as is already obſerved) a Hen can lay an Egg, without having before had Congreſs with a Cock; and this, when newly laid, ſhall be of the ſame Bigneſs, Colour, Taſte, and Smell, with another Egg which has been cocked (as they call it); *i. e.* which has been fecundated by the maſculine ſeminal *Materies:* But the Difference will appear, when both are put under the Hen, in order to be hatched; for the one ſhall pullulate or chit, and the other ſhall become fetid and rot.

The Caſe is juſt the ſame with the Seed of a Plant, it may be augmented and increaſed in its Bulk; it may become firm, hard, and ſolid, and have all the Tokens of a perfect Ripeneſs; the Seed Veſſels may be enlarged, and the Pulp or *Parenchyma* of the Fruit may be augmented; and yet the Particles of the Seed may remain crude, indigeſted, and incapable to be explicated and dilated, or ſet in a ſuitable Motion, whereby to protrude the *Fibrilla* of the Root at one End, and the ſeminal Leaves at the other; except it has before received ſome extraneous Matter, or ſome active Particles from the male Parts of the Flower, or from the male Flower itſelf.

In order to confirm the Neceſſity of two Sexes of Plants, as well as in Animals, this familiar Conſideration may be added: That the Fertility or Barrenneſs of any Tree, in the more or leſs fruitful Seaſons, may be known to ignorant or leſs curious Perſons, by the Quantity of the Flowers which appear in the Spring Time; and that not only in Trees alone, where the Flower and Fruit are upon one and the ſame Foot Stalk, but alſo in ſuch Trees, where the Flowers are upon diſtinct Trees, or ſeparate Places upon the ſame Tree; for it is eaſy to determine, by the Catkins or *Iuli* upon the Walnut, Filbert, or Hazle Trees, whether ſuch or ſuch Trees will be fertile or barren for the enſuing Seaſon, before any of the Embryos begin to break, be puſhed forth, or appear.

Having already treated of the male and female Parts of Flowers, we ſhall next conſider their Uſe.

Flowers, in this Reſpect, may aptly be divided into that of male Flowers, which (as has been before obſerved) were formerly reputed barren; and the Plants which produce them were alſo called female Plants, becauſe thoſe Perſons not having any Notion of different Sexes in Plants, they were called female, upon Account of their Weakneſs; or if they had any Thought of Sexes in them, it was only illuſive.

The Ancients were ignorant of thoſe which are now-a-days called hermaphrodite Flowers; and they, not having a true Notion of Sexes of Plants, could not imagine, that the Parts of both Sexes ſhould be in one Flower, upon one and the ſame Foot Stalk.

And although hermaphrodite Animals bear the leaſt Proportion in the animal Kingdom, yet Hermaphrodites have the greateſt Share in the vegetable, though they are not ſo numerous as they have been ſuppoſed to be; for, upon a ſtrict Examination it will be found, that a great many more Plants have diſtinct male and female Flowers, than was formerly believed.

The Neceſſity of different Sexes in Plants having been demonſtrated, and that the female Seed, though it ſhould ripen to the full, cannot be fertile, except it be impregnated by what it receives from the male Parts of Flowers, we ſhall next explain the Organs of Generation in both Sexes.

In the animal Oeconomy, there are, beſides thoſe Veſſels that are deſtinated for Nutrition, and the Secretion of the ſeveral Juices in the Body, ſpermatick Veſſels, which conſiſt of *Præparantia*, *Deferentia*, and *Continentia Semen*. The *Præparantia* in Males, are the Blood Veſſels and the *Teſtes*; the one conveys the Blood, and the other ſeparates the *Semen* from Blood, and elaborates it.

So likewiſe in Plants there are Veſſels that receive the nutritious Particles from the Earth, and convey it to the Extremity of the Plant; ſome of which tend directly to the Leaf, and others to the Flowers.

Thoſe which go to the Foot Stalk of the Flower may not improperly be called ſpermatick Veſſels, for it is from them that the ſeminal Particles in male, female, and hermaphrodite Flowers are ſeparated; therefore the Foot Stalks of the hermaphrodite Flowers are proportionably larger than thoſe either of the male or female; they have a double Office, and contribute ſucceſſively to both.

In thoſe where the Calyx becomes the Fruit, the greateſt Supply is furniſhed to it firſt, and diſtributed in its cortical Parts, as is viſible in the Roſe; in which the Foot Stalk is ſo far enlarged at firſt, as to be of an equal Bigneſs with the Bud.

After the Calyx is thus formed, the next Diſtribution is to the inner or centrical Part of the Flower, which Dr. *Grew* calls Attire, and where the Piſtillum becomes the Fruit; the Piſtillum and Stylus are formed at the ſame Time with the Stamina and Apices.

The Stylus at the very firſt acquires both its due Length and Bigneſs; for the nutritious Particles aſcending in the Center never ſtop till the Stylus is ſtretched out to its full Length; and in ſuch as are furniſhed with a peculiar Apex, that is formed firſt; the Neck of the Stylus, or that Part next to it, is the biggeſt; from thence it gradually decreaſes in its Groſneſs, till it comes to the Piſtillum. This is eaſily perceived by thoſe who will take the Pains to open the Bud of a Lilly, Tulip, &c. before they are half blown.

The Stamen is furniſhed next with an extraordinary Supply of the nutritious Particles before the Flower is blown; theſe, whether fewer or more, are at firſt brought to their proportional Largeneſs, being round and juicy.

The Apex is the third which receives this extraordinary Supply of the Nouriſhment, for after that the Stylus is formed, that it may lean to it after the Veſſels of the Stamen are extended to their full Length, and ſo formed, that they can convey ſuch an extraordinary Quantity of Particles as may fill up the Capacity of the Apex, it is then more enlarged than ever after; for if the Flower of a Lilly be opened before it be blown, the Apex will be found to be full as long as the Stamen; for as the one Half of the Apex covers the Stamen, fixed to its Center, ſo the other Half of it is ſo far extended above the Stamen, as the Stamen remained uncovered below it, towards the Pedicle or Foot Stalk.

The fourth Part of a Flower is the Petala, which receives this extraordinary Supply of Nouriſhment before the blowing; theſe upon the Reverſe, are firſt enlarged towards the Pedicle, and are afterwards extended and ſtretched forth in Proportion to the Enlargement of the Attire; at firſt they are all groſſer, and more ſucculent towards the Origin, and gradually become thinner and broader. The Stamina of monopetalous Flowers do, for the moſt Part, ariſe partly from the Petalon itſelf, and partly from the Calyx; eſpecially if the Stamina correſpond in Number to the Petala, as in the *Hexapetalæ*, or *Polypetalæ Liliaceæ* of *Tournefort*, where every Stamen ariſes oppoſite to the Middle of the Petalon.

This Obſervation (how and when this more than ordinary Supply of Nouriſhment is carried to the Flowers) eaſily demonſtrates wherein the Analogy of the Organs of Generation in Plants and Animals conſiſts.

In Animals, the ſeminal Matter is received by proper Veſſels from the ſame Blood from whence the other Secretions, fit for the Preſervation of the animal Oeconomy proceed; ſo that the Blood in Animals being the ſame with the Sap in Plants, and both being conveyed after the ſame Manner throughout the ſeveral Bodies, it neceſſarily follows, that the one as well as the other, muſt have proper Veſſels for Secretion of the ſeminal Matter.

Let it then be conſidered, That the Sap or nutritious Juice aſcends in common to the Pedicle of the Flower, as the Blood flows by the *Aorta deſcendens*; and that, at the Calyx or Bottom of the Flower, ſome Share goes to one Part of it, and ſome to another; as the Aorta ſends one Branch to the ſpermatick Veſſels, and the Remainder of it goes to perform the other Functions; and as a Part of the Sap is ſeparated by the Pedicle of the Flower, when the Remainder is diſtributed throughout the remaining Parts of the Plant, ſo the *Arteria præparans* goes directly to the Teſtes in the Males, and Ovarium in the Female: And in Flowers, ſome Veſſels tend directly to the Calyx (if it becomes the Fruit) or to the Perianthium (if there be any), ſome to the Petala, ſome to the Stamina, ſome to the Piſtillum or Uterus, as it is called by *Malpighius*.

Theſe Things being ſeriouſly reflected on, we muſt of Neceſſity conclude,

1. That the ſame due Care is taken to elaborate and prepare the more ſubtle and impenetrable Particles of the nutritious Juice in Plants, as of the Blood in Animals.

2. This Subſtance ſo prepared, as it muſt be deſigned for ſome extraordinary Uſe, ſo that this Uſe can be no other than that of being the Means of fecundating the female Seed in Plants, as the other is of the feminine Ova in Animals.

If any one ſhall take a Flower full blown, and pull one of the Stamina from the Pedicle, he will find a rough viſcid Liquor, like to the Sperma, which remains here till its moſt ſubtile Parts have aſcended the Stamen, or perhaps the more groſs Particles might have remained there, after the moſt ſubtile had aſcended, before the Flower was blown; this is as plain and demonſtrable as can be in the Lilies, and in the Orange Lily, and moſt of the *Martagon* Lilies, there is a Contrivance more obvious:

This viſcid Liquor aſcending by parallel Ducts to the Apex, there this ſubtile Matter is retained till it is farther elaborated by the Evaporations of the more humid and aqueous Particles, by the Heat of the Sun; and then it becomes a moſt ſubtile, fine, impalpable Duſt, which is then ſaid to be ripe, and is called the Farina.

Dr. *Blair*, after having given the Sentiments of ſeven different Authors upon the Subject, proceeds to give his own, without ſubſcribing to the Sentiment of either the one or the other; and endeavours, by a ſtrict Examination of the Flowers themſelves, to find out which of theſe two Opinions, ſo diametrically oppoſite to each other, are moſt agreeable to Fact.

But before he begins, he lays down this general Maxim, which he takes for granted, That *Nature is uniform in all her Operations, and never recedes from thoſe Rules laid down by the wiſe Diſpoſer of all Things at the Creation, by performing the ſame Thing after two different and contrary Methods*; and thence concludes, That if the Farina be a Congeries of ſeminal Plants in one Species, it muſt be ſo in all.

If there be an open and direct Paſſage, or though it be not ſo direct, yet if by any direct Paſſage, by which it can be demonſtrated, that one ſingle Grain of the Farina can enter every individual Seed in one Plant, it muſt be ſo in all; but if neither of theſe hold good, and if it can be proved by ocular Inſpection, without the Aſſiſtance of a Microſcope, in thoſe very Plants exemplified by Mr. *Morland*, Mr. *Geoffroy*, and Mr. *Bradley*, that the Farina in Subſtance cannot enter the ſeminal Veſſel; or if it does, that there is no direct Paſſage for it to enter each particular Seed, after it has ſo got into the *Capſula* or *Siliqua*; then he hopes, both their Queries, Suppoſitions, and aſſertions muſt fall.

As for the *Corona Imperialis*, the firſt Example given by Mr. *Morland*, the Flower of which hangs downwards, though he does not deny but its Stylus may be hollow all the Way, and that it may be open at the Extremity, yet by its Situation, and ſeveral other Circumſtances, it does not ſeem to him to favour this Opinion.

For firſt, as there is a continual Conflux of Particles through the Skin in animal Bodies, it is alſo ſo in Vegetables: This appears by the immediate fading of Flowers, or any other Part of the Plant, after it has been plucked off; which proceeds from the Evaporation of the Particles in the little Tubes, without any more ſucceeding in their Place.

He thinks it as reaſonable to ſuppoſe, that theſe Particles flow out by the hollow Stylus, as by any other Part, and alſo more ſenſibly there than elſewhere, becauſe of their being concentrated within ſuch narrow Bounds; and that if theſe Particles deſcend by the Stylus hanging downwards, the Particles, or rather Grains of the Farina, can never aſcend that ſame Way.

2dly, That if it ſhould be granted, that theſe Grains did aſcend by the Stylus, how do they get into the ſeminal Veſſel? That being cloſely ſhut up, as will appear to any one who will obſerve it.

3dly, Whereas Mr. *Morland* ſuppoſes, *That the Rain either waſhes it, or the Wind ſhakes it down the Tube, till it reaches the ſeminal Veſſel*; Dr. *Blair* obſerves, That the Extremity which is the upper Part of the Stylus in an erect Flower, muſt be the lower in a dependent one; ſo that if either the Rain or Wind have Acceſs to it, it muſt neceſſarily either waſh or drive it away from the ſeminal Veſſel, which is now the Stylus.

But here the Doctor takes notice of another Contrivance, for anſwering that Purpoſe, *i. e.* a Sort of a Pelvis or Ciſtern, called by *Linnæus* Nectarium ſituated at the Origin or Root of each Petalon, filled with a viſcous Liquor which continues there, and never exceeds its Bounds ſo long as the Petalon is in Health: *For ſince the Apices are here ſo artfully fixed, that they turn every Way with the leaſt Wind*, as Mr. *Morland* rightly obſerves, when they burſt, and the Farina is driven to and fro, though it cannot ſo eaſily enter the Tube, yet it may conveniently be blown up towards the Orifice of the Petala ſurrounding the Stylus, where it is ſtopped or ſtaid by this Viſcoſity, till it has performed its Office.

To confirm this, he inſtances Mr. *Fairchild*, who, he ſays, being perſuaded that this viſcous Liquor did ſome Way or other contribute towards the fructifying of this Plant, but not underſtanding how it did ſo, he tried the Experiment, by wiping this Liquor off as ſoon as it was depoſited in the Pelvis, and the Flower which he ſo ſerved did not bear any Fruit.

And the Way the Doctor accounts for this is, that the Humidity being removed, the Farina is no ſooner blown upwards, than it immediately falls down, without producing any Effect; and that which he takes to be a Confirmation of this is, that both Tulips and Fritillarias have this Pelvis or Baſon, yet it is for the moſt Part dry and empty; becauſe the Flowers of the former being erect, they have no ſuch need of this Liquor to retain the Duſt; for that the Rain having immediate Acceſs to them, may waſh the Duſt towards the Origin of the Petala; where it can remain till it has performed its Office; whereas the Rain having no Acceſs to the inner Surface of the Flower of the *Corona Imperialis*, it is naturally endowed with this Humidity, depoſited there by ſeveral excretory Ducts, in order to render it fit for the Purpoſe: And *Malpighius* himſelf takes Notice of this Singularity in this Flower, though he aſcribes no Uſe to it.

The next Example propoſed by Mr *Morland*, is the yellow Lily, which, according to his Figure, is repreſented as having Apices equally high with the Top of the Stylus, and the Petala over-topping each other; whereas he ſays, that by the narroweſt Inſpection he ever could make, the Top of the Apices (they being then perpendicularly ſituated) reaches no higher than the Neck of the Button upon the Top of the Stylus, and that this is before the Apices begin to burſt and ſhed the Duſt; but as ſoon as the Flower begins to open, they depart from the Stylus, and force the Petala outwards, by a certain Elaſticity, and expand themſelves; this being done, they immediately change their Poſture from a perpendicular to an oblique or horizontal one; nor do they ever pour out their Duſt or Farina, till they can conveniently drop it upon the Bottom of the Flower, and towards the Root of the Piſtillum.

But taking it for granted that it was ſo, the Top of the Stylus (which the Doctor calls the Button, in Oppoſition to the *Apices Staminum*,) he ſays, is ſo compact, and of ſo firm a Subſtance, that it is next to impoſſible, that the Farina in Subſtance, or integral Parts, can paſs through it.

If the integral Parts, the complete Grain, the minute *Globuli*, in which the whole ſeminal Plant is contained, cannot then enter, the whole compound muſt be diſſolved, and the minute ſeminal Particles in this ſmall Grain of Duſt muſt be diſunited; and if ſo, How ſhall theſe again come to cement, ſo as to make up one continued Body? Or how ſhall this little Body, ſo united, penetrate a ſecond Time the Partition Wall betwixt the Stylus and Piſtillum? And again, How ſhall it find out its Way to its Neſt, in the proper Embryo of the Seed?

The Doctor takes Notice of the White Lily, the Orange Lily, the *Martagon* Lily, &c. as Objections to the Opinions of Mr. *Morland*, *Bradley*, &c. and alſo mentions the Iris, as a moſt pregnant Inſtance, that the Farina cannot ſo much as come at the Piſtillum; for having ſix Petala, the three Stamina with long Apices lie hid between the three Petala which hang downwards, and three large Expanſions of the bifid Stylus, and the upper Part of the down-hanging Petalon: The Farina can never reach the Center of the Stylus, though it were hollow, which it is not, but muſt deſcend along its Outſide, to the Top and Outſide of the Rudiment of the Fruit, there to emit its Effluvia.

Theſe and other Inſtances, he concludes, are ſufficient Proof, that the Farina cannot enter the Stylus, penetrate into the Piſtillum, or inner Part of the ſeminal Veſſel, nor have the leaſt Acceſs to the Embryo of the Seed.

As to the Objection, That there is not Paſſage ſufficient to admit the male Seed into the Uterus, or even into the Ovaries, it is thus anſwered:

If it be conſidered how every Flower, when it is prepared for the Act of receiving the male Seed, is ſo much under the Influence of the Sun, that the Petals open at its Approach, and ſhut up again at its Departure, it very well explains how the Piſtillum, or female Parts of Generation, are relaxed at one Time more than another, *i. e.* that the female Parts are more relaxed at the opening of the Flower, than when the Flower is ſhut up; for the Flower Leaves adhering to the Bottom of the Piſtillum, muſt conſequently, when they bend back, put every Part of the Piſtillum into a different Poſture to that in which it was when the Petals were ſhut.

And it is certain, that it is the Preſence of the Sun that ripens the male Duſt in the Apices, and opens the little Caſes in which it is contained, giving them a Springineſs that flings forth that Duſt as ſoon as it is ripe, ſo as to ſcatter it to a conſiderable Diſtance. The female Parts are at this Time dilated by the opening of the Flower Leaves, and the Apices and Chives, concurring at the ſame Time in flinging forth their male Duſt, anſwer the ſame End in the Generation of Plants, that the Act of Copulation does among Animals.

Having thus given ſeveral Reaſonings and Arguments uſed by various Authors, who have made it their Study to inveſtigate the Mode of Generation of Vegetables, whether the Impregnation of them proceeds from the *Farina fœcundans*, or male Duſt, entering the Uterus of Plants in Subſtances, or by Effluvia, I ſhall not take upon me to determine the Diſpute; eſpecially ſince Mr. *Boyle* has proved, that all Effluvia are ſubtile Particles of Matter; ſo that it matters not how ſmall or minute theſe Particles are, ſince a Body in its firſt State may be ſo minute as to be ſcarcely perceptible.

I ſhall therefore conclude with mentioning a few Experiments of my own, which I communicated to Dr. *Patrick Blair*, which he improved as a Proof of his Opinion of Effluvia; and Mr. *Bradley* alſo as a Proof of the Farina entering the Uterus in Subſtance, and leave the curious Enquirer to determine on that Side of the Queſtion, to which Reaſoning and Experiment ſhall influence him.

I ſeparated the male Plants of a Bed of Spinach from the female; and the Conſequence was, that the Seed did ſwell to the uſual Bigneſs, but when ſown it did not grow afterwards; and ſearching into the Seed, I found it wanted the *Punctum Vitæ*, or what *Geoffroy* calls the Germen.

I ſet twelve Tulips by themſelves, about ſix or ſeven Yards from any other, and as ſoon as they blew, I took out the Stamina with their Summits ſo very carefully, that I ſcattered none of the male Duſt; and about two Days afterwards I ſaw Bees working on a Bed of Tulips, where I did not take out the Stamina; and when they came out they were loaded with the Farina or male Duſt on their Bodies and Legs; and I ſaw them fly into the Tulips, where I had taken out the Stamina, and when they came out, I found they had left behind them ſufficient to impregnate theſe Flowers, for they bore good ripe Seeds which afterward grew.

In a Parcel of Savoys, which were planted for Seed near white and red Cabbages, the Seeds, when ſown, produced half red, and ſome white Cabbages, and ſome Savoys with red Ribs, and ſome neither one Sort nor the other, but a Mixture of all Sorts together in one Plant, which I ſuppoſe might happen by the Effluvia of the different Sorts impregnating the Uterus of each other.

In a Letter communicated by *Paul Dudley*, Eſq; to the *Royal Society*, written from *New-England*, he mentions the interchanging of the Colours of the *Indian* Wheat, if the various Colours are planted in Rows near each other; but if they are planted ſeparately, they conſtantly keep to their own Colour; and this interchanging of Colours has been obſerved, when the Diſtance between the Rows of Corn has been ſeveral Yards, though he ſays, if there happens to be a high Board Fence between the different coloured Corns, the Alteration of Colours is entirely prevented.

It is from different Flowers impregnating each other, that the ſeveral Varieties have been produced; and this gives new Light to the Floriſts, for raiſing a much greater Variety of Flowers; for by planting the different coloured Flowers near each other, ſo that the Flowers when fully blown may be intermixed, their Farina will impregnate each other, ſo that the Seeds will produce variegated Flowers partaking of both Colours. But it muſt be obſerved, that Flowers of different Genera will not impregnate each other, therefore the Plants muſt be of the ſame Genus which are placed together.

Cucumbers and Melons always produce male and female

male Flowers upon different Parts of the ſame Plant; the male Flower (which appears upon a ſlender Foot Stalk, and has a large Style in the Middle, covered with an Orange-coloured Farina) is by the Gardeners commonly called falſe Bloſſoms, and are ſometimes by unſkilful Perſons pulled off ſoon after they appear, ſuppoſing that they weaken the Plants, if ſuffered to remain, which is a very great Miſtake; for, in order to try this Experiment, I planted four Holes of Melons in a Place pretty far diſtant from any other; and when the Flowers began to appear, I conſtantly pulled off all the male Flowers from Time to Time before they opened; the Conſequence was, that all the young Fruit dropt off ſoon after they appeared, and not one ſingle Fruit remained to grow to any Size, though the Vines were equally ſtrong with thoſe which I had planted in another Place, where I ſuffered all the Flowers to remain upon them, from which I had a great Quantity of Fruit. But this Doctrine is now ſo well eſtabliſhed among the Gardeners, being confirmed by Experience, that they now carry the male Flowers of the Cucumbers and Melons to the female, if there are none ſituated very near them, and gently ſtrike the Farina of the male, into the Boſom of the female Flowers, and thereby ſet the young Fruit, which would otherwiſe drop off.

There are ſome Perſons, who ſtill object to this Theory of the Generation of Plants, from having obſerved ſome Plants which were termed female, growing ſingly, and at a very great Diſtance from any male Plants of the ſame Kind, which had for ſome Years produced Seeds which were perfect, and grew when ſown; and, indeed, I was myſelf a little ſtaggered in my Opinion, on having obſerved a female Plant of the white Briony, which grew ſingly in a Garden, where there were no other Plants of the ſame Kind; which for ſeveral Years produced Berries, which grew and flouriſhed perfectly well. This put me upon examining the Plant more carefully than I had before done, when I found there were great Numbers of male Flowers intermixed with the female, on the ſame Plant; and ſince then I have frequently found the ſame in many other Plants, which are generally male and female in different Plants, yet have ſometimes both Sexes on the ſame Plant; ſo that the Objections which have been made to this Doctrine, may not have proper Evidence for their Support.

It is certain, that the female Plants may produce Fruit, without the Impregnation of the male; but it is not certain, that this Fruit or Seed will, if ſown, produce another Plant. What has been ſo often related by Travellers and Hiſtorians, of the Neceſſity of the male Palm Tree being near the female, in order to render it fruitful, hath been fully refuted by Father *Labat*, in his Account of *Africa*, where he has treated of the ſeveral Sorts of Palms: He ſays, That he obſerved in *Martinico* a large Palm Tree, which grew by the Side of a Convent, which produced Plenty of Fruit, though there was no other Palm Tree growing within two Leagues of this; but he alſo obſerved, that none of theſe Fruit would grow, though they had many Trials of them; ſo that they were obliged to procure ſome Fruit from *Barbary*, in order to propagate theſe Trees. He likewiſe adds, That the Fruit which grew on this female Tree, never ripened ſo perfectly, nor was ſo well taſted, as thoſe which came from Trees which had ſtood near ſome of the male: Therefore we may conclude, that the Fruit or Seed may be produced by the female Plants of moſt Kinds, without the Aſſiſtance of the male Sperm, which may appear to Sight perfect, and fit to produce others; but if we examine the Seeds, we ſhall find, that moſt of them have not the Germ or little Plant incloſed, nor will grow if they are ſown.

From theſe and many other Experiments, it is very plain, that there is a Neceſſity that the Embryo of the female Flower ſhould be impregnated by the Farina or male Duſt, in order to render the Fruit perfect; but how, or in what Manner, it is performed, is what we can only gueſs at, ſince in the Generation of Animals, our greateſt Naturaliſts differ very much in their Opinions; nor can any of them aſcertain any particular Method how it is performed. I ſhall therefore conclude with quoting the Words of the Rev. Dr. *Hales*, which are a moſt ingenious Summary of the whole Doctrine of the Generation of Plants.

“ If I (ſays he) may be allowed to indulge Conjec-
“ ture in a Caſe in which the moſt diligent Enquirers
“ are, as yet, after all their laudable Reſearches, ad-
“ vanced but little farther than mere Conjecture, I
“ would propoſe it to their Conſideration, whether from
“ the manifeſt Proof we have, that Sulphur ſtrongly
“ attracts Air, a Hint may not be taken, to conſider,
“ whether this may not be the primary Uſe of the
“ *Farina fœcundans*, to attract or unite with itſelf ela-
“ ſtick or other refined active Particles. That this Fa-
“ rina abounds with Sulphur, and that a very refined
“ Sort, is probable from the ſubtile Oil which Chy-
“ miſts obtain from the Chives of Saffron; and if
“ this be the Uſe of it, was it poſſible that it could
“ be more aptly placed for the Purpoſe on very move-
“ able Apices fixed on the ſlender Points of the Sta-
“ mina, whereby it might eaſily, with the leaſt Breath
“ of Wind, be diſperſed in the Air, thereby ſurround-
“ ing the Plant, as it were, with an Atmoſphere of
“ ſublimed ſulphureous Pounce? For many Trees and
“ Plants abound with it, which, uniting with the
“ Air Particles, may, perhaps, be inſpired at ſeveral
“ Parts of the Plant, and eſpecially at the Piſtillum,
“ and be thence conveyed to the *Capſula ſeminalis*,
“ eſpecially towards Evening, and in the Night, when
“ the beautiful Petala of the Flowers are cloſed up,
“ and they with all the other Parts of the Veget-
“ able, are in a ſtrongly imbibing State. And if to
“ theſe united, ſulphureous, and aereal Particles, we
“ ſuppoſe ſome Particles of Light to be joined (for
“ Sir *Iſaac Newton* has found, that Sulphur attracts
“ Light ſtrongly;) then the Reſult of theſe three
“ by far the moſt active Principles in Nature, will
“ be a *Punctum ſaliens* to invigorate the ſeminal
“ Plant; and thus we are at laſt conducted, by
“ the regular Analyſis of vegetable Nature, to the
“ firſt enlivening Principle of their minuteſt Ori-
“ gin.”

GENISTA. *Lin. Gen. Plant.* 766. *Tourn. Inſt. R. H.* 643. *Tab.* 412. Broom; in *French*, *Genêt.*

The *Characters* are,

The Empalement of the Flower is of one Leaf, tubulous, and divided into two Lips; the upper Lip is deeply cut into two, and the under into three equal Parts. The Flower is of the Butterfly Kind; the Standard is oval, acute, and remote from the Keel, being wholly reflexed; the Wings are a little ſhorter than the Standard, and are looſe; the Keel is erect, and longer than the Standard, and is indented at the Top. It hath ten Stamina joined, which are ſituated in the Keel, terminated by ſingle Summits. In the Center is an oblong Germen, ſupporting an aſcending Style, crowned by an acute twiſted Stigma. The Germen afterward becomes a roundiſh turgid Pod with one Cell, opening with two Valves, incloſing Kidney-ſhaped Seeds.

The *Species* are,

1. GENISTA *ramis ancipitibus articulatis, foliis ovato-lanceolatis. Hort. Cliff.* 355. Jointed Broom, with Branches looking both Ways, and jointed and oval Spear-ſhaped Leaves. This is the *Chamæ Geniſta ſagittalis. C. B. P.* 395. Dwarf Acorn-ſhaped Broom.

2. GENISTA *foliis lanceolatis, ramis ſtriatis teretibus erectis. Hort. Cliff.* 355. Broom with Spear-ſhaped Leaves, and erect, taper, and channelled Branches. This is the *Geniſta tinctoria Germanica foliis anguſtioribus. C. B. P.* 395. Narrow-leaved Dyers Broom.

3. GENISTA *foliis lanceolatis acutis, ramis ſtriatis teretibus lateralibus.* Broom with Spear-ſhaped Leaves which are acute, and taper channelled Branches proceeding from the Side of the Stalk. This is the *Geniſta tinctoria Germanica. C. B. P.* 395. Common Dyers Broom, or Wood-waxen.

4. GENISTA *foliis inferioribus cuneiformibus, ramis floriferis linearibus, floribus majoribus erectioribus.* Broom with lower Leaves Wedge-ſhaped, thoſe on the Flower Branches very narrow, and larger more erect Flowers. This is the *Geniſta tinctoria maxima Luſitanica, Piurna Luſitanorum. Tourn. Inſt.* 643. Greater *Portugal* Dyers Broom, called *Piurna* by the *Portugueze.*

5. GENISTA *foliis lanceolatis, ramis paniculatis, caule arboreſcente.* Broom with Spear-ſhaped Leaves, paniculated Branches, and a Tree-like Stalk. This is the *Geniſta arboreſcens, Tartarica flore luteo. Amman.* Tree-like *Tartarian* Broom with a yellow Flower.

6. GENISTA *ramis triquetris ſubarticulatis, foliis tricuſpidatis. Lin. Sp. Plant.* 710. Broom with three cornered jointed Branches, and Leaves ending in three Points. This is the *Geniſtella fruticoſa Luſitanica. Tourn. Inſt.* 646. Shrubby *Portugal* Dyers Broom.

7. GENISTA *foliis lanceolatis obtuſis, caule tuberculato decumbente. Hort. Cliff.* 355. Broom with obtuſe Spear-ſhaped Leaves, and a declining Stalk having Tubercles. This is the *Geniſta ramoſa, foliis Hyperici. C. B. P.* 395. Branching Broom with Leaves like St. Johnſwort.

8. GENISTA *ſpinis ſimplicibus, ramis floriferis inermibus, foliis lanceolatis. Hort. Cliff.* 355. Broom with ſingle Spines, Flower Branches without Spines, and Spear-ſhaped Leaves. *Geniſta ſpartium minus Anglicum. Tourn. Inſt.* Small *Engliſh* Broom, called *Petty Whin.*

9. GENISTA *ſpinis decompoſitis, ramis floriferis, inermibus, foliis linearibus piloſis. Lin. Sp. Plant.* 711. Broom with decompounded Spines, Flower Branches without Spines, and narrow hairy Leaves. This is the *Geniſta ſpinoſa minor Hiſpanica villoſiſſima. C. B. P.* 395. Moſt hairy ſmall *Spaniſh* prickly Broom.

10. GENISTA *ſpinis compoſitis, ramis floriferis inermibus, foliis lanceolatis. Prod. Leyd.* 371. Broom with compound Spines, whoſe Flower Branches are not prickly, and Spear-ſhaped Leaves. *Geniſta ſpinoſa minor, Germanica. C. B. P.* 395. Smaller *German* prickly Broom.

The 1ſt Sort grows naturally in *France*, *Italy*, and *Germany*. This Plant ſends out ſeveral Stalks from the Root, which ſpread flat on the Ground, and divide into many flat Branches which are jointed, and their two Sides are edged like a broad Sword; theſe are green and herbaceous, but are perennial. At each of the Joints is placed one ſmall Spear-ſhaped Leaf, without any Foot Stalk. The Flowers are produced in cloſe Spikes at the End of the Branches, they are yellow, of the Pea-bloom Kind, and are ſucceeded by ſhort hairy Pods, which contain 3 or 4 Kidney-ſhaped Seeds. The Plants flower in *June*, and the Seeds ripen in *September*.

This Sort is propagated by Seeds, which, if ſown in Autumn, the Plants will come up the following Spring; but when they are ſown in Spring, the Plants rarely come up the ſame Year: When the Plants come up, they require no other Culture but to keep them clean from Weeds, and thin them where too cloſe; at *Michaelmas* they may tranſplanted where they are to remain, and after that only require to be kept clean, for they are very hardy, and will live ſeveral Years.

The 2d Sort riſes with ligneous Stalks about two or or three Feet high, ſending out many taper channelled Branches which grow erect, that are garniſhed with ſmall Spear-ſhaped Leaves placed alternate, and are terminated by ſeveral Spikes of yellow Flowers, which are of the Pea-bloom Kind, but ſmall; theſe are ſucceeded by ſhort Pods, which turn black when ripe, and contain four or five Kidney-ſhaped Seeds. It flowers in *June* and *July*, and the Seeds ripen in Autumn.

The 3d Sort grows naturally in *England*. This hath ſhrubby Stalks, which riſe about 3 Feet high, garniſhed with Spear-ſhaped Leaves, which are broader, and end in ſharper Points than thoſe of the former; the Branches come out from the Side of the Stalks, almoſt their whole Length, and do not grow ſo upright as thoſe of the ſecond; theſe are terminated by looſe Spikes of yellow Flowers, which are ſucceeded by Pods like thoſe of the ſecond Sort. It flowers, and the Seeds are ripe about the ſame Time as the former. The Branches of the Plant are uſed by the Dyers, to give a yellow Colour, from whence it is called Dyers Broom, Green-wood, Wood-waxen, or Dyers-weed.

The 4th Sort grows naturally in *Portugal* and *Spain*. This riſes with ſhrubby channelled Stalks 4 Feet high, ſending out ſeveral Branches which grow erect; the lower Leaves are Wedge-ſhaped, being broad and rounding at the Top, but very narrow at their Baſe; thoſe which are higher upon the Flower Branches are narrow, and equal at both Ends; the Flowers are produced in pretty long Spikes at the End of the Branches, they are larger than thoſe of the other Sorts, and of a paler yellow Colour. They appear in

June and *July*, and are ſucceeded by Pods like the former Sorts.

This Sort is a little tender, and in very ſevere Froſts is often killed in *England*, where the Plants are not protected.

The 5th Sort grows naturally in *Tartary*, from whence the Seeds were brought to the Imperial Garden at *Peterſburgh*, and were afterward ſent to *England.* This riſes with a woody Stalk to the Height of 7 or 8 Feet, ſending out many ſlender Branches, which are garniſhed with ſmall Spear-ſhaped Leaves placed alternate; the upper Part of theſe Branches, for more than a Foot in Length, ſend out ſmall flowering Branches, terminated by looſe Spikes of Flowers, ſo that each Branch terminates in a Panicle of Flowers. Theſe appear in *June* and *July*; the Seeds ripen in Autumn.

The 6th Sort hath a low ſhrubby Stalk, which ſeldom is more than a Foot high, ſending out ſeveral weak Branches which are jointed, and garniſhed with ſmall Leaves ending in 3 acute Parts. The Flowers are produced in looſe Spikes at the Top of the Branches, they are of a pale yellow Colour, and appear the latter End of *June* and *July*, and the Seeds ripen in *September*. This Plant grows naturally in *Portugal*.

The 7th Sort hath a ſhrubby Stalk which declines toward the Ground, and is ſet over with Tubercles; it divides into a few ſmall Branches, garniſhed with ſmall obtuſe Leaves. The Flowers are diſpoſed in ſmall looſe Spikes at the End of the Branches; they are ſmall, of a pale yellow Colour, and are ſucceeded by ſhort Pods filled with Kidney-ſhaped Seeds. It flowers in *June*, and the Seeds ripen in Autumn. This grows naturally in *Germany* and *France*.

The 8th Sort grows naturally on open Heaths, in many Parts of *England*. It hath a ſhrubby Stalk, which riſes about two Feet high, ſending out many ſlender Branches, armed with long ſingle Spines, and garniſhed with very ſmall Spear-ſhaped Leaves, placed alternate on every Side the Branches: The Flower Branches have no Spines, theſe are ſhort, and have 5 or 6 yellow Flowers growing in a Cluſter at the End. They come out in *April* and *May*, and are ſucceeded by ſhort turgid Pods, which contain 4 or 5 ſmall Kidney-ſhaped Seeds. Theſe ripen in *July*.

The 9th Sort grows naturally in the South of *France* and *Italy*; it was ſent me from *Nice*, where it was found growing in Penty. This hath a ſhrubby Stalk, which ſends out many ligneous Branches, armed with branching Thorns, compoſed of ſeveral ſharp Thorns, which come out from each other, but the ſhort Branches which produce the Flowers have no Spines; theſe are garniſhed with ſmall hairy Leaves of different Forms, ſome of them being as narrow as Hairs, and others are of the Spear Shape; the Branches are terminated by Cluſters of yellow Flowers, which are ſucceeded by ſhort compreſſed hairy Pods, filled with Kidney-ſhaped Seeds. The whole Plant has much the Appearance of the common Furz or Gorſe, but is very hairy, and the Flower Branches being without Thorns, are the moſt obvious Diſtinctions.

The 10th Sort grows naturally in *Germany*. This riſes with ſhrubby Stalks to the Height of 3 or 4 Feet, and divides into many ſlender Branches, armed with compound Spines, and garniſhed with Spear-ſhaped Leaves placed alternate; thoſe Branches which produce the Flowers have no Spines, but are terminated by ſhort looſe Spikes of yellow Flowers, which are ſucceeded by ſhort Pods, containing 3 or 4 Kidney-ſhaped Seeds. It flowers in *June*, and the Seeds ripen in *Auguſt*.

All theſe Sorts of Broom are propagated by Seeds, which, if ſown in Autumn, will ſucceed much better than if ſown in Spring, and a Year will be thereby ſaved; as theſe Plants ſend out long ſtringy tough Roots, which run deep into the Ground, they do not bear tranſplanting well, eſpecially if they are not removed young, therefore the beſt Way is to ſow a few Seeds in thoſe places where the Plants are deſigned to remain, and to pull up all except the moſt promiſing Plants as ſoon as they are paſt Danger; after this the Plants will require no other Culture, but to keep them clean from Weeds; but where this cannot be practiſed, the Seeds may be ſown thin upon a Bed of light Earth, and when the Plants come up, they muſt be kept clean from Weeds till the following Autumn, when the Plants ſhould be carefully taken up and tranſplanted where they are deſigned to remain. They are all very hardy Plants except the 4th and 10th Sorts, which muſt have a warm ſheltered Situation and dry Soil, otherwiſe they will not live through the Winter, but the others will grow in almoſt any Soil or Situation.

GENISTA SPINOSA, the Furz, Whins, or Gorſe. *See* Ulex.

GENTIANA. *Lin. Gen. Plant.* 285. *Tourn. Inſt. R. H.* 80. Gentian, or Fellwort; in *French*, *Gentiane.*

The *Characters* are,

It hath a permanent Empalement to the Flower; which is cut into five acute Segments. The Flower hath one Petal, which is tubulous, and cut into 5 Parts at the Top which are flat. It hath 5 Awl-ſhaped Stamina, ſhorter than the Petal, terminated by ſingle Summits. In the Center is ſituated an oblong cylindrical Germen, having no Style, but is crowned by two oval Stigmas. The Germen becomes an oblong taper-pointed Capſule with one Cell, containing many ſmall Seeds faſtened to the Valves of the Capſule.

The *Species* are,

1. GENTIANA *corollis quinquefidis rotatis verticillatis, calycibus ſpathaceis. Hall. Helv.* 479. Gentian with quinquefid Wheel-ſhaped Petals growing in Whorls, and Hood-like Empalements. This is the *Gentiana major lutea. C. B. P.* 187. Greater yellow Gentian.

2. GENTIANA *corollis quinquefidis campanulatis oppoſitis pedunculis foliis linearibus. Lin. Sp. Plant.* 228. Gentian with Bell-ſhaped quinquefid Petals placed oppoſite upon Foot Stalks, and very narrow Leaves. This is the *Gentiana anguſtifolia autumnalis major. C. B. P.* 188. Greater narrow-leaved autumnal Gentian.

3. GENTIANA *corollis quinquefidis campanulatis oppoſitis ſeſſilibus, foliis amplexicaulibus. Lin. Sp. Plant.* 227. Gentian with Bell-ſhaped quinquefid Petals, ſitting cloſe to the Stalk, and oppoſite, and Leaves embracing the Stalk. This is the *Gentiana Aſclepiadis folio. C. B. P.* 187. Gentian with a Swallow-wort Leaf.

4. GENTIANA *corollâ quinquefida campanulatâ, caulem excedente. Lin. Sp. Plant.* 228. Gentian with a Bell-

ſhaped quinquefid Petal above the Stalk. This is the *Gentiana Alpina latifolia, magna flore. C. B. P.* 187. Broad leaved *Alpine* Gentian with a large Flower, commonly called *Gentianella*.

5. GENTIANA *corollis quinquefidis infundibuliformibus, ramis unifloris alternis. Lin. Sp. Plant.* 229. Gentian with Funnel-ſhaped quinquefid Petals, and alternate Branches having one Flower. This is the *Gentiana annua, foliis Centaurii minoris. Tourn. Inſt.* 81. Annual Gentian with leſſer Centaury Leaves.

6. GENTIANA *corollis quadrifidis imberbibus verticillatis ſeſſilibus. Lin. Sp. Plant.* 231. Gentian with quadrifid Petals without Beards, growing in Whorls cloſe to the Stalks. This is the *Gentiana cruciata. C. B. P.* 188. Croſſwort Gentian.

7. GENTIANA *corollis quadrifidis margine ciliatis. Lin. Sp. Plant.* 231. Gentian with a four-pointed Petal, whoſe Border is hairy. This is the *Gentianella cærulea oris piloſis. C. B. P.* 188. Blue Gentian with hairy Brims.

8. GENTIANA *corollis quinquefidis hypocrateriformibus, calycibus inflatis plicatis. Lin. Sp. Plant.* 229. Gentian with Salver-ſhaped quinquefid Petals, and ſwollen plaited Empalements. *Gentiana utriculis ventricoſis. C. B. P.* 188. Gentian with a ventricoſe Tube.

9. GENTIANA *corollis quinquefidis infundibuliformibus, caule dichotomo. Lin. Sp. Plant.* 229. Gentian with a Funnel-ſhaped five-pointed Petal, and a dichotomous Stalk. *Centaurium minus. C. B. P.* Leſſer Centaury.

10. GENTIANA *corollis octofidis, foliis perfoliatis. Lin. Sp. Pl.* 232. Gentian with an eight-pointed Petal, and thorough-wax Leaves. This is the *Centaurium luteum perfoliatum. C. B. P.* 278. Yellow perfoliate Centaury.

11. GENTIANA *corollis quinquefidis infundibuliformibus, floribus alternis ſeſſilibus. Lin. Sp. Plant.* 230. Gentian with Funnel-ſhaped five-pointed Petals, Flowers growing alternate, and ſitting cloſe to the Stalks. This is the *Centaurium minus ſpicatum album. C. B. P.* 278. Leſſer Centaury with a white ſpiked Flower.

12. GENTIANA *corollis quinquefidis infundibuliformibus, pedunculis longiſſimis.* Gentian with a Funnel-ſhaped five pointed Petal, and a very long Foot Stalk. *Centaurium minus maritimum amplo flore cæruleo. Plum. Cat.* 3. Leſſer maritime Centaury with a large blue Flower.

The firſt Sort is the common Gentian of the Shops, whoſe Root is one of the principal Ingredients in Bitters.

This Plant hath a large thick Root of a yellowiſh brown Colour, and a very bitter Taſte, the lower Leaves are of an oblong oval Shape, a little pointed at the End, ſtiff, of a yellowiſh green, and have 5 large Veins on the Back of each. The Stalk riſes 3 or 4 Feet, and is garniſhed with Leaves, growing by Pairs at each Joint, almoſt embracing the Stalk at their Baſe; theſe are of the ſame Form with the lower, but diminiſh gradually in their Size to the Top. The Flowers come out in Whorls at the Joints, toward the upper Part of the Stalks, ſtanding on ſhort Foot Stalks, whoſe Origin is from the Wings of the Leaves; theſe are of a pale yellow, and have one Petal, which is divided almoſt to the Bottom, having an oblong cylindrical Germen, which afterward ſwells to an oblong taper Capſule, bifid at the Point, and opens in two Cells, filled with ſmall Seeds.

It grows naturally in the Paſtures in *Switzerland*, and in the mountainous Parts of *Germany*, from whence the Roots are brought to *England* for medicinal Uſe; there is a compound Water, and an Extract made of them.

But a few Years ago, there was a Mixture of Henbane Roots brought over with Gentian, which was unhappily uſed, and occaſioned great Diſorders in the Perſons to whom it was adminiſtered; great Enquiry was then made to find out what that Root could be, ſome ſuſpecting it to be the Root of Deadly Nightſhade, and others believing it to be ſome of the poiſonous umbelliferous Roots, but on comparing it with ſome dried Roots of the Henbane, I found they were the ſame. We have likewiſe an Account of the noxious Quality of theſe Roots, printed in the *Synopſis Stirpium Hibernicarum*, wich was communicated to the Author by Dr. *Thomas Molyneaux*, Phyſician to the State; it was as follows:

The Dean of *Clonfert* was making ſome Alterations in his Garden, and, looking over his Workmen, he obſerved them to dig up many Roots, which he took for Skirrets, and therefore ordered ſome of them to be carried in and dreſſed for Dinner, which was accordingly done, but all thoſe who eat of them were in a ſhort Time ſeized with Dizzineſs in their Head, Sickneſs at the Stomach, attended with an unuſual Heat and Drineſs in their Throats, and two, who had eaten a larger Share than the reſt, loſt the Uſe of their Reaſon, and became delirious, which continued for ſome Days; and as it appeared evident theſe Diſorders were occaſioned by the Roots, the Dean cauſed ſome of them to be planted, that he might be aſſured what the Plant was whoſe Roots had this bad Quality; and in the Spring, when they put out their Leaves, they proved to be the Henbane, which has been noticed by old Writers to be poſſeſſed of theſe Qualities. As the Diſorders which were occaſioned by theſe ſuppoſed Gentian Roots, were nearly the ſame, as is above related, I thought it might be of Uſe to inſert it here, to caution others againſt eating Roots they are unacquainted with.

This Plant delights in a light loamy Soil and a ſhady Situation, where it will thrive much better than in a light dry Soil, or in an open Expoſure. It is propagated by Seeds, which ſhould be ſown in Pots ſoon after it is ripe, for if it is kept till Spring, it will not ſucceed; theſe Pots ſhould be placed in a ſhady Situation, and kept clean from Weeds. In Spring the Plants will appear, when they muſt be duly watered in dry Weather, and kept clean from Weeds till the following Autumn, then they ſhould be carefully ſhaken out of the Pots, ſo as not to break or injure their Roots, and a ſhady Border of loamy Earth, ſhould be well dug and prepared to receive them, into which they ſhould be planted at about ſix Inches Diſtance each Way, obſerving to let the Top of the Roots be a little below the Surface of the Ground, then preſs the Earth cloſe to the Roots; after this they will require no farther Care but to keep them conſtantly clean from Weeds, and if the following Spring ſhould prove dry, they ſhould be duly watered, which will greatly forward their Growth. In this Border the Plants may ſtand two Years, by which

Time they will be fit to tranſplant where they are deſigned to remain; therefore in Autumn, ſo ſoon as their Leaves decay, they may be removed; but as the Roots of theſe Plants run deep into the Ground, like Carrots, there muſt be great Care taken in digging them up, not to cut or break their Roots, for that will greatly weaken, if it does not kill them. After the Plants are well fixed in their Places, they require no other Culture, but to dig the Ground about them early in the Spring, before they begin to ſhoot, and in Summer to keep them clean from Weeds. The Roots of theſe Plants will continue many Years, but the Stalks decay every Autumn; the ſame Roots do not flower two Years together, nor ſeldom oftener than every third Year, but when they flower ſtrong, they make a fine Appearance; and as theſe delight in ſhady moiſt Ground, where but few ornamental Plants will thrive, ſo they ſhould not be wanting in good Gardens.

The 2d Sort grows naturally in moiſt Paſtures in many Parts of *England*, but particularly in the North; this riſes with an upright Stalk, about a Foot high, garniſhed with ſmooth Leaves, an Inch and a Half long, and leſs than a Quarter of an Inch broad; they are placed oppoſite, and have no Foot Stalks. The Flowers are produced on the Top of the Stalk, three or four in Number, ſtanding upon Foot Stalks, alternately above each other; they are large, Bell-ſhaped, and divided into five Points at their Brim, and are of a deep blue Colour, ſo make a fine Appearance; theſe come out the latter End of *July* in the warm Parts of *England*, but in the North they are a full Month later.

It may be propagated by Seeds as the firſt Sort, and the Plants may be treated in the ſame Way; but as this Sort doth not ſhoot its Roots deep into the Ground, it may be tranſplanted with leſs Hazard; however, if theſe are removed with a Ball of Earth to their Roots, they will not feel their Removal ſo much as when the Earth is all taken from them. This Sort ſhould be planted in a ſtrong moiſt loamy Soil, in which the Plants will thrive and flower annually, but in a warm dry Soil they will not thrive or flower.

The 3d. Sort grows naturally upon the *Helvetian* Mountains; this riſes with an upright Stalk, near a Foot high, garniſhed with ſmooth Leaves, about two Inches long, and three Quarters of an Inch broad at their Baſe, where they embrace the Stalk, but they end in acute Points; they are placed oppoſite, are of a fine green, and are diminiſhed in their Size as they are nearer the Top; they have 5 longitudinal Veins, which join at both Ends, but diverge from each other in the Middle. The Flowers come out by Pairs oppoſite, from the Bottoms of the Leaves, ſtanding on ſhort Foot Stalks; they are pretty large, Bell-ſhaped, and of a fine blue Colour, ſo make a fine Appearance when they are open. This Sort flowers in *June* and *July*.

It may be propagated by Seeds as the firſt Sort, and the Plants may be treated in the ſame Way, but they muſt have a moiſt loamy Soil, otherwiſe they will not thrive. It may alſo be propagated by Offsets, which may be divided from the Roots; theſe ſhould be taken off in Autumn, which is the beſt Seaſon for removing all theſe Sorts of Plants, but theſe ſhould not be removed, or parted oftener than every third Year, where they are expected to produce ſtrong Flowers.

The 4th Sort grows naturally on the *Alps* and *Helvetian* Mountains, but has been long cultivated in moſt of the curious Gardens in *Europe*; this is commonly known by the Title of *Gentianella*. It is a low Plant, the Stalks ſeldom growing more than three or four Inches high; they are garniſhed with ſmooth Leaves placed oppoſite, which are near two Inches long, and Half an Inch broad, ſitting cloſe to the Stalk. The Flowers grow erect on the Top of the Stalk, ſo ſtand quite above them; theſe are often ſingle, but ſometimes, when the Plants are ſtrong, there will be four or five at the End of each Stalk; they are large, Bell-ſhaped, of a deep Azure blue, and the fineſt of that Colour of any Flower yet known. It uſually flowers in *May*, but ſometimes they flower again in Autumn.

This is commonly propagated by parting the Roots, in the ſame Manner as before directed for the third Sort, but theſe muſt not be often tranſplanted, or parted, if they are wanted to flower ſtrong; this Sort ſhould have a ſoft loamy Soil, and a ſhady Situation, where the Plants will thrive and flower well every Year.

It may alſo be propagated by Seeds, which, in a good Soil, the Plants will produce in Plenty; theſe ſhould be ſown in Autumn, as before directed for the firſt Sort, and if the Plants are planted in a good Soil, they will be ſtrong enough to flower the ſecond Year after they come up; theſe ſeedling Plants will flower much ſtronger than thoſe propagated by Offsets.

The 5th and 8th Sorts are low annual Plants, which grow naturally upon the *Alps*, and are very rarely cultivated in Gardens. The 5th ſeldom riſes more than two Inches high, branching out from the Root into ſeveral ſlender Stalks, garniſhed with very ſmall Leaves placed by Pairs, and each Stalk is terminated by one ſmall blue Flower ſtanding erect. The 8th Sort grows about four Inches high, with a ſingle upright Stalk, of a purple Colour. The Leaves at the Root are oval, but thoſe upon the Stalk are narrow, and ſtand oppoſite. The Stalk is terminated by one blue Flower, with a large bellied Empalement, which is plaited, and the Petal of the Flower riſes but little above the Empalement, ſo does not make much Appearance. After the Top Flower decays, there are frequently two ſmaller Flowers which come out from the Side of the Stalk, at the two upper Joints; theſe flower after each other, the upper one coming firſt, ſo that there is a Succeſſion of Flowers till Autumn.

As theſe Plants uſually grow upon moiſt ſpongy Ground, it is very difficult to cultivate them in Gardens, for unleſs they have a Soil approaching near to that in which they naturally grow they will not thrive; the only Method to obtain them is, either to ſow their Seeds in Pots, or upon a moiſt boggy Ground in Autumn, but it muſt be in the Shade; and when the Plants come up, they may be thinned, and the Surface of the Ground about them, covered with Moſs, which ſhould be conſtantly kept moiſt; with this Management I have ſeen the Plants thrive and flower very well.

The 6th Sort is a perennial Plant, which grows naturally upon the *Apennines*, and the *Helvetian* Mountains; this riſes with an upright Stalk, about ſix Inches high, garniſhed with ſmooth Spear-ſhaped Leaves, about two Inches long, and one broad in the Middle, ſitting cloſe to the Stalk; they are placed oppoſite, and each Pair of Leaves croſs one another, from whence it is called Croſſwort Gentian. The Flowers are produced in Whorls round the Stalks at the upper Joints, ſitting very cloſe to the Stalks, and at the Top there is a large Cluſter growing in the ſame Form; theſe are of a light blue Colour, and appear in *May*. This may be propagated by Seeds, or Offsets, as the 3d and 4th Sorts, and the Plants muſt be treated in the ſame Way.

The 7th Sort grows naturally upon the *Alps*, and other mountainous Parts of *Europe*; this is a low perennial Plant, whoſe Stalks are very ſlender, and rarely riſe more than three or four Inches high, garniſhed with ſmall, narrow, acute-pointed Leaves, placed in Pairs; each Stalk is terminated by one large blue Flower, which is hairy on the Inſide at the Brim. This flowers in *July* and *Auguſt*; it may be propagated and treated in the ſame Manner as the 3d and 4th Sorts.

The 9th Sort is the Leſſer Centaury of the Shops; this grows naturally upon dry Paſtures in moſt Parts of *England*, where it riſes in Height proportionable to the Goodneſs of the Soil, for in good Land it is frequently a Foot high, but in poor Soils not more than three or four Inches. It is an annual Plant, with upright branching Stalks, garniſhed with ſmall Leaves placed by Pairs. The Flowers grow in Form of an Umbel at the Top, and are of a bright purple Colour; they come out in *July*, and the Seeds ripen in Autumn. This Plant cannot be cultivated in Gardens.

The 10th Sort grows naturally on chalky Grounds in *England*. It is an annual Plant, riſing with an upright Stalk, a Foot high, garniſhed with oval pointed Leaves, whoſe Baſe ſurrounds the Stalk; they grow by Pairs oppoſite, and are of a gray Colour; the Stalks and Leaves are very ſmooth. The Flowers grow in Form of an Umbel on the Top of the Stalk; they are of a bright yellow Colour, and are cut into 8 Parts at the Top. Theſe appear in *July*, and the Seeds ripen in Autumn.

The 11th Sort is an annual Plant, which grows naturally in the South of *France* and in *Italy*; this riſes with an upright Stalk, about a Foot high, ſending out ſeveral Branches toward the Top, garniſhed by ſmall Leaves placed oppoſite. The Flowers are produced from the Side, and at the Top of the Stalk, in Form of looſe irregular Umbels; they are white, and about the Size of thoſe of the common Centaury.

The 12th Sort grows naturally in the *Weſt-Indies*, where it was diſcovered by Father *Plumier*, and the late Dr. *Houſtoun* found it growing in Plenty at *La Vera Cruz*, in low moiſt Places where the Water ſtagnates, but at a remote Diſtance from the Sea. The Seeds of this Plant he ſent to *England*, which ſucceeded in the *Chelſea* Garden; it riſes with an upright branching Stalk, near 2 Feet high, garniſhed with oblong, ſmooth, acute, pointed Leaves, placed oppoſite; the upper Part of the Stalk divides into 6 or 7 long naked Foot Stalks, each ſuſtaining one large blue Flower, divided into 5 Segments at the Brim. The Flowers are ſucceeded by oblong Capſules with one Cell, filled with ſmall Seeds.

This is propagated by Seeds, which muſt be ſown on a hot Bed, and the Plants afterward treated as other annual Plants from warm Countries, being too tender to thrive in the open Air in *England*. If the Seeds of this Plant are ſown in Autumn, in Pots placed in the Tan Bed of the Stove, they will ſucceed better than when they are ſown in the Spring, and the Plants will flower early, ſo good Seeds may be obtained.

GENTIANELLA. *See* Gentiana.

GERANIUM. *Lin. Gen. Plant.* 346. *Tourn. Inſt. R. H.* 266. *Tab.* 142. [takes its Name from Γέρανος, *Gr.* a Crane, or Stork, becauſe its Fruit reſembles the Bill of a Crane.] Crane's-bill; in *French*, *Bec de Grue*.

The *Characters* are,

The Flower hath a permanent Empalement, compoſed of 5 ſmall oval Leaves. The Flower hath 5 Petals, which are oval, or Heart-ſhaped, ſpreading open; theſe are in ſome Species equal, and, in others, the upper two are much larger than the three lower. It hath 10 *Stamina, which are alternately longer, but are ſhorter than the Petals, and are terminated by oblong Summits. In the Bottom of the Flower is ſituated a five-cornered Germen, ſupporting an Awl-ſhaped Style, longer than the Stamina, which is permanent, crowned by* 5 *reflexed Stigmas. The Flower is ſucceeded by* 5 *Seeds, each being wrapped up in the Huſk of the Beak, which is extended the Length of the Style, where they are twiſted together at the Point, ſo as to form the Reſemblance of a Stork's Beak.*

The *Species* are,

1. GERANIUM *pedunculis bifloris, foliis peltatis multipartitis rugoſis, pinnato-laciniatis acutis.* Crane's-bill with two Flowers on each Foot Stalk, and rough Target-ſhaped Leaves, cut into many Parts, whoſe Segments are acute and Wing-ſhaped. This is the *Geranium batrachioides, Gratia Dei Germanorum. C. B. P.* Crane's-bill with a Crowfoot Leaf, and large blue Flowers.

2. GERANIUM *pedunculis bifloris, calycibus inflatis, piſtillo longiſſimo. Hort. Cliff.* 343. Crane's-bill with two Flowers on each Foot Stalk, ſwollen Empalements, and a very long Pointal. This is the *Geranium batrachioides, longius radicatum, odoratum. J. B.* Long-rooted ſweet-ſmelling Crane's-bill, with a Crowfoot Leaf.

3. GERANIUM *pedunculis unifloris, foliis quinquepartitis trifidis orbiculatis. Lin. Sp. Plant.* 685. Crane's bill with one Flower on each Foot Stalk, and orbicular Leaves, which are trifid, and divided into five Parts. This is the *Geranium ſanguineum, maximo flore. H. Ox.* Bloody Crane's-bill with a large Flower.

4. GERANIUM *pedunculis unifloris, foliis quinquepartitis laciniis obtuſis brevibus, caulibus decumbentibus.* Crane's-bill with one Flower upon each Foot Stalk, Leaves divided into five Parts, whoſe Segments are ſhort and blunt, and declining Stalks. This is the *Geranium hæmatodes Lancaſtrenſe, flore eleganter ſtriato. Raii Hiſt.* Bloody Crane's-bill with a variegated Flower.

5. GERANIUM *pedunculis bifloris, foliis caulinis trilobis integris ſerratis, ſummis ſubſeſſilibus. Hort. Cliff.* 343. Crane's-bill with two Flowers on each Foot Stalk, and the Leaves upon the Stalks, having 3 entire ſawed Lobes, the upper Leaves ſitting cloſe to the Stalk. This is the *Geranium nodoſum. Cluſ. Hiſt.* Knotty Crane's-bill.

6. GERANIUM *pedunculis bifloris, foliiſque alternis, calycibus ſubariſtatis, caule erecto. Lin. Sp. Plant.* 681. Crane's-bill with two Flowers on each Foot Stalk, alternate Leaves, bearded Empalements, and an erect Stalk.

This is the *Geranium phæum ſive fuſcum, petalis reflexis, folio non maculoſo. H. L.* Brown Crane's-bill with reflexed Petals, and Leaves not ſpotted.

7. GERANIUM *pedunculis bifloris, foliis quinquelobatis inciſis, petalis reflexis.* Crane's bill with two Flowers upon each Foot Stalk, Leaves divided into five Lobes, which are cut, and the Petals of the Flowers reflexed. This is the *Geranium phæum ſive fuſcum, petalis rectis ſeu planis. folio maculato. H. L.* Brown Crane's-bill with plain Petals, and ſpotted Leaves.

8. GERANIUM *pedunculis bifloris, foliis caulinis trilobis obtuſè-crenatis, infernè hirſutis.* Crane's-bill with two Flowers upon each Foot Stalk, the Leaves on the Stalks having three Lobes, which are bluntly crenated, and hairy on the under Side. This is the *Geranium Romanum, verſicolor ſive ſtriatum. Park. Par. Roman* Crane's-bill with ſtriped Flowers.

9. GERANIUM *pedunculis bifloris, foliis peltatis inciſo-ſerratis, caule erecto. Flor. Lapp.* 266. Crane's-bill with two Flowers on each Foot Stalk, Target-ſhaped Leaves, which are cut in acute Points, and an erect Stalk. This is the *Geranium batrachioides montanum noſtras. Ger.* Mountain Crane's-bill with a Crowfoot Leaf.

10. GERANIUM *pedunculis bifloris, foliiſque oppoſitis, petalis integris, calycibus brevioribus.* Crane's-bill with two Flowers on each Foot Stalk, and Leaves placed oppoſite on the Branches; the Petals of the Flower entire, and ſhorter Empalements. This is the *Geranium Orientale columbinum, flore maximo, aſphodeli radice. T. Cor. Oriental* Dove's-foot Crane's-bill with an Aſphodel Root, and large Flowers.

11. GERANIUM *pedunculis bifloris, foliiſque oppoſitis, caule erecto ramoſo, petalis bifidis.* Crane's-bill with two Flowers on each Foot Stalk, the Leaves on the Branches placed oppoſite, a branching upright Stalk, and bifid Petals to the Flower. *Geranium Columbinum perenne Pyrenaicum maximum. Tourn. Inſt.* Greateſt perennial Dove's-foot Crane's-bill of the *Pyrennees.*

12. GERANIUM *pedunculis longiſſimis multifloris, calycibus ariſtatis, foliis bipinnatis.* Crane's-bill with very long Foot Stalks ſuſtaining many Flowers, bearded Empalements, and double Wing-pointed Leaves. *Geranium Alpinum Coriandri folio, longius radicatum, flore majore purpureo. Michel. Alpine* Crane's-bill with a Coriander Leaf, a long Root, and a larger purple Flower.

13. GERANIUM *pedunculis bifloris, foliis multipartitis ſericeis, pedunculis longioribus, petalis integris.* Crane's-bill with two Flowers on each Foot Stalk, ſilken Leaves which are divided into many Parts, longer Foot Stalks, and the Petals of the Flower entire. *Geranium argenteum Alpinum. C. B. P.* Silvery *Alpine* Crane's-bill.

14. GERANIUM *pedunculis bifloris, caule dichotomo erecto, foliis quinquepartitis inciſis ſummis ſeſſilibus. Flor. Virg.* 78. Crane's-bill with two Flowers on each Foot Stalk, upright Stalks divided by Pairs, and cut Leaves divided into five Parts, the upper ſitting cloſe to the Stalk. This is the *Geranium batrachioides Americanum maculatum, floribus obſoletè cæruleis. Hort. Elth.* 158. *American* ſpotted Crane's-bill with obſolete blue Flowers.

15. GERANIUM *pedunculis bifloris, foliis quinquelobatis crenatis, petalis integris caule ramoſo.* Crane's-bill with two Flowers on each Foot Stalk, crenated Leaves with five Lobes, entire Petals to the Flower, and a branching Stalk. This is the *Geranium annuum minus Bohemicum, purpuro-violaceum. Mor. Hiſt.* 2. 511. Leſſer annual Crane's-bill of *Bohemia,* with a purple violet Flower.

16. GERANIUM *pedunculis ſubunifloris, foliis quinquepartitis acutis, foliolis pinnatifidis. Lin. Sp. Plant.* 683. Crane's-bill with one Flower on a Foot Stalk, Leaves divided into five acute Parts, and the ſmaller Leaves Wing-pointed.

17. GERANIUM *pedunculis multifloris, calycibus pentaphyllis, floribus pentandris foliis pinnatis inciſis obtuſis. Hort. Cliff.* 334. Crane's-bill with many Flowers on each Foot Stalk, having five leaved Empalements, five Stamina to the Flowers, and cut winged obtuſe Leaves. This is the *Geranium cicutæ folio, moſchatum. C. B. P.* Muſked Crane's-bill, frequently called *Muſcovy.*

18. GERANIUM *pedunculis bifloris, calycibus pentaphyllis, floribus pentandris, foliis pinnato-inciſis crenatis.* Crane's-bill with two Flowers on a Foot Stalk, five leaved Empalements, five Stamina to the Flower, and Leaves cut like Wings, which are crenated. This is the *Geranium latifolium annuum, cæruleo flore, acu longiſſimâ. H. Ox.* Broad leaved annual Crane's-bill with a blue Flower, and a very long Beak.

19. GERANIUM *pedunculis multifloris, calycibus pentaphyllis, floribus pentandris, foliis pinnatis acutis ſinuatis. Lin. Sp. Plant.* 680. Crane's-bill with many Flowers on each Foot Stalk, having five leaved Empalements, five Stamina to the Flowers, and acute ſinuated winged Leaves. This is the *Geranium Cicutæ folio, acu longiſſimâ. C. B. P.* 319. Crane's-bill with a Hemlock Leaf, and very long Beaks to the Seed.

20. GERANIUM *pedunculis multifloris, calycibus pentaphyllis, floribus pentandris, foliis bipinnatis multifidis, caule erecto.* Crane's-bill with many Flowers on each Foot Stalk, having five leaved Empalements, Flowers with five Stamina, and many pointed winged Leaves. This is the *Geranium Cicutæ folio viſcoſum erectum, acu longiſſimâ. Juſſieu.* Erect viſcous Crane's-bill with a Hemlock Leaf, and very long Beaks to the Seed.

21. GERANIUM *calycibus monophyllis, foliis cuculatis dentatis. H. C.* Crane's-bill with an Empalement of one Leaf, and indented hooded Leaves. This is the *Geranium Africanum arboreſcens, ibiſci folio rotundo, carlinæ odore. H. L. African* Tree Crane's-bill with a round Marſhmallow Leaf, and Smell of the Carline Thiſtle.

22. GERANIUM *calycibus monophyllis, foliis cuculatis anguloſis, acutè dentatis.* Crane's-bill with a one leaved Empalement, and angular hooded Leaves, which are ſharply indented. This is the *Geranium Africanum arboreſcens, ibiſci folio anguloſo, floribus amplis purpureis. Phil. Tranſ.* 388. *African* Tree Crane's-bill with an angular Marſhmallow Leaf, and large purple Flowers.

23. GERANIUM *calycibus monophyllis, foliis cordato-orbiculatis, inciſis zonâ notatis. Hort. Upſ.* Crane's-bill with a one leaved Empalement, and round Heart-ſhaped Leaves, cut, and marked with a Circle. This is the *Geranium Africanum arboreſcens, alchimillæ hirſuto folio, floribus rubicundis. Com. Præl. African* Tree Crane's-bill with an hairy Ladies Mantle Leaf, and red Flowers.

24. GERANIUM *calycibus monophyllis, foliis orbiculato-reniformibus tomentoſis crenatis integriuſculis. Hort. Upſ.* 195. Crane's-bill with one leaved Empalements, and round Kidney-ſhaped Leaves, which are woolly, crena-

ted, and entire. This is the *Geranium Africanum arboreſcens, malvæ folio plano lucido, flore elegantiſſimè kermeſino. Boerh. Ind. African* Tree Crane's-bill with a plain ſhining Mallow Leaf, and an elegant ſcarlet Flower.

25. GERANIUM *calycibus monophyllis, foliis lobatis undatis villoſis. Hort. Upſal.* 196. Crane's-bill with Empalements of one Leaf, and Leaves divided into Lobes, which are waved and hairy. This is the *Geranium Africanum fruteſcens, malvæ folio odorato laciniato. H. L. African* ſhrubby Crane's-bill with a jagged ſweet ſmelling Mallow Leaf, commonly called Roſe *Geranium.*

26. GERANIUM *calycibus monophyllis, foliis adſcendentibus lobatis pubeſcentibus. Hort. Upſal.* 196. Crane's-bill with one leaved Empalements, and aſcending Leaves, which have Lobes, and are covered with ſoft Hairs. This is the *Geranium Africanum fruteſcens, malvæ folio laciniato, odorato inſtar meliſſæ, flore purpuraſcente. Boerh. Ind. African* ſhrubby Crane's-bill with a jagged Mallow Leaf, ſmelling like Balm, and a purpliſh Flower.

27. GERANIUM *calycibus monophyllis, corollis papilionaceis, vexillo dipetalo maximo, foliis angulatis. Hort. Cliff.* 345. Crane's-bill with Empalements of one Leaf, a Butterfly Flower, with a large Standard of two Petals, and angular Leaves. This is the *Geranium Africanum arboreſcens, malvæ folio mucronato, petalis florum inferioribus vix conſpicuis. Phil. Tranſ. African* Tree Crane's-bill, with a pointed Mallow Leaf, and the under Petals of the Flower ſcarce diſcernable.

28. GERANIUM *calycibus monophyllis, foliis glabris ſubovatis carnoſis crenatis. Hort. Cliff.* 345. Crane's-bill with Empalements of one Leaf, and ſmooth oval fleſhy Leaves, which are crenated. This is the *Geranium Africanum fruteſcens, folio craſſo & glauco, acetoſo ſapore. Com. Præl. African* ſhrubby Crane's-bill with a thick glaucous Leaf, and an acid Taſte like Sorrel.

29. GERANIUM *calycibus monophyllis, petalis linearibus, caule carnoſo nodoſo, foliis duplicato-pinnatifidis. Lin. Vir.* 67. Crane's-bill with one leaved Empalements, very narrow Petals, a fleſhy knotted Stalk, and Leaves doubly Wing-pointed. This is the *Geranium Africanum fruteſcens, chelidonii folio, petalis florum anguſtis albidis, carnoſo caudice. Phil. Tranſ. Geranium Africanum, folio alceæ, flore albo. Boerh. Ind. alt. African* ſhrubby Crane's-bill with a Leaf like the Alcea, the Petals of the Flower white and narrow, and a fleſhy Stalk.

30. GERANIUM *calycibus monophyllis, caule carnoſo gibboſo, foliis ſubpinnatis. Lin. Sp. Plant.* 677. Crane's-bill with one leaved Empalements, a fleſhy gibbous Stalk, and winged Leaves. This is the *Geranium Africanum noctu olens, tuberoſum & nodoſum, aquilegiæ foliis. H. L. African* Crane's-bill, ſmelling ſweet in the Night, with knotty tuberous Stalks, and Leaves like Columbine.

31. GERANIUM *calycibus monophyllis, foliis tripartitis inciſis, intermedia majore, pedunculis umbelliferis geminis, caule carnoſa. Lin. Vir.* 67. Crane's-bill with one leaved Empalements, Leaves cut into three Segments, the Middle one being the largeſt, double Foot Stalks with Flowers growing in Umbels, and a fleſhy Stalk. This is the *Geranium Africanum, folio alceæ, flore occineo fulgidiſſimo. Boerh. Ind. alt. African* Crane's-bill with a Vervain Mallow Leaf, and a deep ſcarlet Flower.

32. GERANIUM *calycibus monophyllis, foliis quinquelobis integerrimis glabris peltatis. Hort. Cliff.* 345. Crane's-bill with Empalements of one Leaf, and ſmooth Target-ſhaped Leaves, having five Lobes, which are entire. This is the *Geranium Africanum, foliis inferioribus aſari, ſuperioribus ſtaphidiſagriæ, maculatis, ſplendentibus, & acetoſo ſapore. Com. Præl. African* Crane's-bill with the under Leaves like *Aſarabacca,* and the upper Leaves like *Staveſacre,* ſhining, ſpotted, and taſting like Sorrel.

33. GERANIUM *calycibus monophyllis, foliis orbiculatis palmatis inciſis piloſis, caule herbaceo. Lin. Vir.* 67. Crane's-bill with Empalements of one Leaf, roundiſh Hand-ſhaped Leaves, divided and hairy, and an herbaceous Stalk. This is the *Geranium Africanum, alchimillæ hirſuto folio, floribus albidis. H. L. African* Crane's-bill with a hairy Ladies Mantle Leaf, and whitiſh Flowers.

34. GERANIUM *calycibus monophyllis, caule carnoſo breviſſimo, ramis longis, foliis cordatis. Hort. Cliff.* 345. Crane's-bill with Empalements of one Leaf, a very ſhort fleſhy Stalk, long Branches, and Heart-ſhaped Leaves. *Geranium Africanum, folio malvæ craſſo molli odoratiſſimo, floſculo pentapetalo albo. Boerh. African* Crane's-bill with a thick, ſoft, ſweet-ſmelling Mallow Leaf, and a ſmall white Flower compoſed of five Leaves.

35. GERANIUM *calycibus monophyllis, foliis bipinnatis multifidis villoſis, radice ſubrotundo.* Crane's-bill with Empalements of one Leaf, double hairy winged Leaves ending in many Points, and a roundiſh Root. This is the *Geranium Americanum, noctu olens, radice tuberoſâ, triſte. Corn. H. Ox. American* tuberous-rooted Crane's-bill, ſmelling ſweet in the Night.

36. GERANIUM *Africanum tuberoſum, anemone folio, incarnato flore. Par. Bat.* Tuberous-rooted *African* Crane's-bill with an Anemony Leaf, and a pale Fleſh-coloured Flower.

37. GERANIUM *Africanum noctu olens, radice tuberoſâ, foliis Paſtinacæ incanis lanuginoſis latioribus, flore pallide flaveſcente. H. L B.* Night ſmelling Crane's-bill with a tuberous Root, broad woolly hoary Parſnep Leaves, and a pale yellowiſh Flower.

38. GERANIUM *Æthiopicum, noctu olens, radice tuberoſâ, foliis myrrhidis anguſtioribus. Breyn. Cent.* Night ſweet ſmelling *Æthiopian* Crane's-bill with a tuberous Root, and narrow Cicely Leaves.

39. GERANIUM *calycibus monophyllis, tubis longiſſimis ſubſeſſilibus, radice ſubrotundâ, foliis lobatis. Prod. Leyd.* 352. Crane's-bill with Empalements of one Leaf, with very long Tubes ſitting cloſe to the Foot Stalk, a roundiſh Root, and Leaves having Lobes. This is the *Geranium Africanum, noctu olens, folio vitis hirſuto, tuberoſum. H. A.* Night ſweet ſmelling *African* Crane's-bill with a hairy Vine Leaf, and a tuberous Root.

40. GERANIUM *calycibus monophyllis, corollis papilionaceis, vexillo dipetalo, foliis bipinnatis, radice annuâ.* Crane's-bill with Empalements of one Leaf, a Butterfly Flower with a Standard of two Petals, doubly winged Leaves, and an annual Root. This is the *Geranium Africanum, folio coriandri, floribus incarnatis, minus. H. L.* Leſſer *African* Crane's-bill with a Coriander Leaf, and a Fleſh-coloured Flower.

41. GERANIUM *calycibus monophyllis, corollis papilionaceis, vexillo dipetalo, foliis bipinnatis, ramis nodoſis ſuffruteſcentibus.* Crane's-bill with Empalements of one

Leaf, a Butterfly Flower with a Standard of two Petals, double winged Leaves, and knotty ſhrubby Branches.

42. Geranium *calycibus monophyllis, foliis palmatis ſubrotundis crenatis, caulibus filiformibus procumbentibus.* Crane's-bill with Empalements of one Leaf, roundiſh Hand-ſhaped Leaves, which are crenated, and Thread-like trailing Stalks. *Geranium Africanum, uvæ criſpæ folio, floribus exiguis rubellis. H. L. African* Crane's-bill with a Gooſberry Leaf, and ſmall reddiſh Flowers.

43. Geranium *calycibus monophyllis, foliis ovatis inæqualiter ſerratis planis. Lin. Sp. Pl.* 679. Crane's-bill with one leaved Empalements, and oval plain Leaves unequally ſawed. This is the *Geranium fruteſcens, folio lato dentato, flore magno rubente. Burm. Afr.* Shrubby Crane's-bill with a broad indented Leaf, and large reddiſh Flower.

The 1ſt Sort grows naturally in moiſt Meadows in many Parts of *England;* but is frequently planted in Gardens for the Beauty of its large blue Flowers; of this there is a Variety with white, and another with variegated Flowers. It hath a perennial Root, which ſends up many Stalks, which riſe near three Feet high, and are garniſhed with Target-ſhaped Leaves, divided into ſix or ſeven Parts at each Joint; theſe are cut into ſeveral acute Segments, after the Manner of winged Leaves, ending in many Points. The Flowers are produced at the Top of the Stalks, each Foot Stalk ſuſtaining two Flowers, whoſe Petals are large and equal; they are of a fine blue Colour, and appear in *May* and *June.*

The Varieties of this may be preſerved by parting their Roots in Autumn; they may be planted in almoſt any Soil or Situation, and require no other Culture but to keep them clean from Weeds. They may alſo be propagated by Seeds, but by this Method they are apt to vary in the Colour of their Flowers. If the Seeds are permitted to ſcatter, the Plants will come up without Care.

The 2d Sort grows naturally in *Germany* and *Switzerland*; this hath a thick fleſhy perennial Root, from which ariſe ſeveral branching Stalks, which grow about one Foot high, garniſhed with Leaves at each Joint, which are divided into five Lobes; theſe are divided at the Top into many ſhort Segments, and are crenated on their Edges, they are of a light green, and ſmooth. The Flowers are produced at the End of the Branches, many growing together in a Bunch, but each ſhort Foot Stalk ſuſtains two Flowers, ſo it may have the Title given it by *Linnæus*, though at the firſt Appearance it ſeems as a many flowered Foot Stalk, and ſtrictly is ſo, becauſe the naked Foot Stalk ſuſtains the whole Bunch. The Flowers have ſwollen Empalements, reſembling inflated Bladders. The Petals are pretty large, equal, and of a fine bright purple Colour, and the Stamina and Style are much longer than the Petals; the whole Plant, when rubbed, emits an agreeable Odour. This flowers about the ſame Time with the firſt Sort, and may be propagated and treated in the ſame Manner, the Plant being equally hardy.

The 3d Sort grows naturally in *England*, but is often admitted into Gardens; this hath pretty thick fleſhy fibrous Roots, which grow to a large Head, from which ariſe many Stalks, garniſhed with Leaves divided into five Parts, or Lobes, which are again divided almoſt to the Mid-rib. The Flowers ſtand upon long hairy Foot Stalks, which come out from the Side of the Stalk, each ſuſtaining one Flower compoſed of five broad regular Petals, which are of a deep purple Colour. This Sort flowers in *June* and *July*; there are two Varieties mentioned of this Sort as diſtinct Species, one whoſe Stalks grow more erect, and the other hath Leaves more deeply divided, but the Plants which I have raiſed from Seeds of theſe do not come up the ſame as the Parent Plants, ſo they are only ſeminal Varieties.

This hath a perennial Root, which may be parted in Autumn, or it may be propagated by Seeds, and the Plants treated in the ſame Manner as the firſt.

The 4th Sort hath been ſuppoſed by ſome to be only a Variety of the third, but is undoubtedly a diſtinct Species; for I have frequently raiſed the Plants from Seeds, which have always proved to be the ſame. The Stalks of this Plant are ſhorter than thoſe of the third, and ſpread flat on the Ground; the Leaves are much leſs, and not ſo deeply divided; and the Flowers much ſmaller and of a pale Colour, marked with purple; it grows naturally in *Lancaſhire* and *Weſtmoreland*, where I ſaw it in Plenty. This may be propagated and treated in the ſame Manner as the others.

The 5th Sort is a perennial Plant, of ſmaller Growth than either of the former. It riſes with branching Stalks about ſix Inches high, garniſhed with Leaves, having three pretty broad Lobes, which are undivided, and crenated on their Edges: Thoſe on the lower Part of the Stalks are placed oppoſite, upon pretty long Foot Stalks; but the upper Leaves ſit cloſe to the Stalks, and are ſingle. The Flowers are produced at the End of the Stalks, ſtanding together upon two ſhort Foot Stalks; they are of a dirty purple Colour, and appear in *June.* It grows naturally in *France.* This Sort may be propagated and treated as the firſt.

The 6th Sort grows naturally on the *Alps* and *Helvetian* Mountains, and is found in ſome Places in the North of *England:* This hath a perennial Root, from which ariſe ſeveral Stalks near a Foot high, garniſhed with Leaves, which are divided into five or ſix Lobes, and laciniated on their Edges; thoſe which grow near the Root have long Foot Stalks; but thoſe on the upper Part of the Stalk ſit cloſe; the Stalk branches out at the Top into three or four Diviſions, each being terminated by two or three Foot Stalks ſuſtaining two Flowers of a dark purple Colour, with erect Petals. This flowers in *June*, and may be propagated by Seeds or parting the Roots, as the firſt Sort.

The 7th Sort is very like the ſixth, but the Leaves are larger, the Lobes ſhorter, broader, and not ſo much cut, and are marked with black; the Stalks riſe higher, the Flowers are larger, and the Petals are reflexed. Theſe Differences are permanent, ſo are ſufficient to conſtitute a ſpecifick Difference between them. This may be propagated and treated in the ſame Manner as the firſt Sort. It grows naturally on the *Alps.*

The 8th Sort hath a perennial Root, which ſends up many branching Stalks a Foot and a Half high, garniſhed with light green Leaves; thoſe on the lower Part of the Stalk have five Lobes and ſtand upon long Foot Stalks; but thoſe on the upper Part have but three Lobes, ſit cloſer to the Stalks, and are ſharply indented on the Edges; the Flowers ſtand upon long ſlender Foot Stalks, each ſuſtaining two Flowers compoſed of five obtuſe Petals, deeply indented at the Top; they are of a dull white, with many purple Stripes running longitudinally thro' them. Theſe appear in *June*; and in cool Seaſons there will be a Succeſſion of Flowers a great Part of *July*. This Sort is very hardy, ſo may be propagated by dividing the Roots, or from Seeds, in the ſame Manner as the firſt Sort.

The 9th Sort grows plentifully in the Meadows in *Lancaſhire* and *Weſtmoreland*; this hath a perennial Root, which ſends out three or four upright Stalks, about nine Inches high, garniſhed with Leaves, having five Lobes, which are ſawed on their Edges, they are placed oppoſite on the Stalks; thoſe on the lower Part having pretty long Foot Stalks, but thoſe on the upper Part ſit cloſer to the Stalks. The Flowers are ſituated on the Top of the Stalks, ſtanding upon ſhort Foot Stalks, each ſuſtaining two pretty large blue Flowers, with entire Petals. This flowers in *May* and *June*, and may be propagated and treated as the firſt Sort.

The 10th Sort was diſcovered by Dr. *Tournefort* in the *Levant*, from whence he ſent the Seeds to the Royal Garden at *Paris*; this hath a perennial Root, from which ariſe a few weak Stalks about nine Inches long, garniſhed with Leaves which are round, and divided into five Lobes, indented at the Top, and placed oppoſite on the Stalks. The Flowers ſtand upon pretty long Foot Stalks, which come ſingle from the Joints of the Stalks, each ſuſtaining two purpliſh Flowers with entire Petals, having very ſhort Empalements. It flowers in *June*, and may be propagated either from Seeds, or by parting the Roots as the firſt Sort, but the Plants require a drier Soil and a warmer Situation, for although in common Winters it will live in the open Air, yet in ſevere Froſt theſe Plants are ſometimes killed, eſpecially when planted in moiſt cold Land.

The 11th Sort grows naturally on the *Pyrenees*; this hath a perennial Root, from which ariſe many branching Stalks a Foot and a Half high, garniſhed with round Leaves, divided into many obtuſe Segments at the Top, and placed oppoſite by Pairs. The Flowers are produced by Pairs on ſhort Foot Stalks, which come out at the Diviſions on the Sides, and at the Top of the Stalks; they are in ſome of a pale purple Colour, and in others white. The Petals of the Flowers are bifid, like thoſe of the common Dove's foot Crane's-bill, to which the whole Plant bears ſome Reſemblance, but the Stalks are erect, the Leaves and Flowers much larger, and the Root is perennial; this will propagate itſelf by its ſcattered Seeds where it has once got Poſſeſſion, and will thrive in any Soil or Situation.

The 12th Sort grows naturally upon the *Alps*. The Seeds were ſent me by Sig. *Micheli*, of *Florence*; this hath a perennial Root, which runs very deep into the Ground. The lower Leaves of the Plant have very long Foot Stalks, they are doubly winged and ſmooth. The Stalks riſe a Foot and a Half high, which are garniſhed with Leaves of the ſame Form as the lower, but are ſmaller, and ſtand oppoſite. The Flowers grow many together upon very long Foot Stalks; they are purple, and have Awns to the Segments of the Empalement. This flowers in *June*, but has never ripened Seeds in *England*. The Plant is hardy, and lives in the open Air, but as the Root puts out no Offſets, nor perfects Seeds here, we have not been able to propagate it.

The 13th Sort grows naturally on the *Alps*; this hath a very thick perennial Root, from which come out roundiſh Leaves, divided into many Parts, ſtanding upon pretty long Foot Stalks; they are very ſilvery, and ſhining like Silk. The Flower Stalks riſe about four or five Inches high, garniſhed with one or two ſmall Leaves, like thoſe below, which ſit cloſe to the Stalk. The Stalks are terminated by two pretty large pale Flowers, whoſe Petals are entire, and ſpread open flat. It flowers in *June*, but rarely ripens Seeds here; it may be propagated by parting the Roots in the ſame Manner as the firſt, and muſt have a ſhady Situation.

The 14th Sort grows naturally in *North America*, from whence the Seeds were ſent to *England*; this hath a perennial Root, from which ariſe ſeveral Stalks about one Foot high, which divide by Pairs, and from the Middle of the Diviſions come out the Foot Stalks of the Flowers, which are pretty long and naked, each ſuſtaining two pale purple Flowers with entire Petals. The Leaves are divided into five Parts, which are cut on their Edges, and placed oppoſite, the lower having pretty long Foot Stalks, but the upper ſit cloſe to the Stalks. It flowers in *June*, and frequently ripens Seeds, from which the Plant may be propagated; it thrives very well in the open Air, and requires no other Culture but to keep it clean from Weeds.

The 15th Sort grows naturally in *Bohemia*; this is an annual Plant, which ſends out many Stalks, dividing into ſeveral Parts, which are garniſhed with Leaves divided into five Lobes, crenated on their Edges; they ſtand upon long Foot Stalks, and are for the moſt Part oppoſite. The Flowers ſtand by Pairs upon pretty long ſlender Foot Stalks, which come out from the Side of the Stalk; they are of a fine blue Colour, and are ſucceded by Seeds, whoſe Capſules and Beaks are black. It flowers moſt Part of Summer, and the Seeds ripen ſoon after, which, if permitted to ſcatter, there will be a Supply of Plants, which want no other Care but to keep them clean from Weeds.

The 16th Sort grows naturally in *Siberia*. The Seeds of this Plant were ſent me by Sir *Charles Linnæus*, Profeſſor of Botany, at *Upſal*; this Sort hath a perennial Root. The Leaves are divided into five acute Lobes, which are cut into many ſharp Wing-like Segments on their Edges; they are placed oppoſite, and have long ſlender Foot Stalks. The Foot Stalks of the Flower come out from the Wings of the Stalk; they are pretty long, ſlender, and each ſuſtain one pale purpliſh Flower. This Sort flowers in *June*, and perfects its Seeds very well, ſo may be eaſily propagated; it will grow on any Soil, or in any Situation.

The 17th Sort is an annual Plant, which is ſometimes found growing naturally in *England*, but is frequently preſerved in Gardens for the muſky Odour of the Leaves, which in dry Weather is very ſtrong. The Leaves are irregularly winged, the Lobes grow alternate, and are cut into many obtuſe Segments on their Edges. The Stalks branch into many Diviſions, and frequently decline to the Ground. The Flowers are produced in Umbels on long Foot Stalks, which ariſe from the Wings of the Stalks; they are ſmall, blue, and have but 5 Stamina in each, their Empalements are compoſed of 5 Leaves. It flowers in *May*, *June*, and *July*, and the Seeds ripen ſoon after, which, if permitted to ſcatter, there will be a Supply of Plants without Care, which will require no Culture, but to keep them clean from Weeds, and thin them where too cloſe; it will thrive in any Soil, or Situation.

The 18th Sort grows naturally in *Crete*; this is an annual Plant with very broad Leaves, which are cut on their Sides regularly, in Form of winged Leaves, and are crenated on their Borders. The Flowers are produced on pretty long Foot Stalks, which come out from the Wings of the Stalk; they have 5 leaved Empalements, and are compoſed of 5 entire blue Petals; theſe are ſucceeded by the largeſt and longeſt Beaks of any Species of this Genus yet known. It flowers in *June* and *July*; ripens Seeds very well, and if they are permitted to ſcatter, the Plants will come up without Care; or they may be ſown in Spring, where they are deſigned to remain, and require no Culture but to thin them where too cloſe, and keep them clean from Weeds.

The 19th Sort grows naturally in *Germany* and *Italy*; this is an annual Plant, which hath ſeveral proſtrate Stalks near a Foot long, garniſhed with winged Leaves, cut into ſeveral acute Parts, placed by Pairs oppoſite. The Flowers come out from the Wings of the Stalk, upon Foot Stalks about 3 Inches long; ſome of theſe ſuſtain many Flowers, but others have no more than two; they are of a pale blue Colour, and are ſucceeded by very long Beaks, but not ſo long, or large as thoſe of the former Sort, but the Seeds of this are frequently uſed for Hygrometers, to ſhew the Moiſture of the Air; if the Seeds are permitted to ſcatter, the Plants will come up and thrive without any other Care than to keep them clear from Weeds, and the Plants which come up in Autumn, will flower early in *May*, but thoſe which are ſown in Spring ſeldom flower till *July*.

The Seeds of the 20th Sort were ſent to the *Chelſea* Garden by Dr. *Juſſieu*, Profeſſor of Botany, at *Paris*; this is an annual Plant, which hath upright Stalks near two Feet high, garniſhed with double winged Leaves, ending in many Points; theſe are very viſcous, and ſtand oppoſite. The Flowers are produced on long naked Foot Stalks, ſtanding many together upon each; they are of a pale blue Colour, and have but five Stamina; their Empalements are compoſed of five Leaves, which end with Awns. It flowers in *May*, *June*, and *July*, according to the Times when the Seeds are ſown, and the Seeds ripen a Month after; this requires no other Culture than the two former Sorts.

There are ſeveral other Sorts of annual *Geraniums*, ſome of which grow naturally in *England*, and are troubleſome Weeds in a Garden, others grow naturally in *France*, *Spain*, *Italy*, and *Germany*, and are preſerved in Botanick Gardens for the Sake of Variety, but as they are Plants of little Beauty, they are rarely admitted into other Gardens, therefore I ſhall not trouble the Reader with an Enumeration of the Species, which would ſwell this Article too much, ſo I ſhall next treat of the *African* Crane's-bills, which are preſerved in moſt of the curious Gardens, where there is Conveniency to ſcreen them from the Froſt in Winter.

The 21ſt Sort grows naturally near the *Cape of Good Hope*; this riſes with a ſhrubby Stalk, 8 or 10 Feet high, ſending out ſeveral irregular Branches, garniſhed with roundiſh Leaves, whoſe Sides are erect, ſo form a Sort of Hood by the hollow Cavity made in the Leaf. The Baſe of the Leaves is cut in Form of a Heart-ſhaped Leaf, and from the Foot Stalk run many Nerves ariſing from a Point, but diverge toward the Sides; the Borders of the Leaves are ſharply indented, thoſe on the lower Part of the Branches have long Foot Stalks, and are placed without Order on every Side, but thoſe on the upper Part have ſhorter Foot Stalks, and ſtand oppoſite. The Flowers are produced in large Panicles on the Top of the Branches; their Empalements are of one Leaf, deeply cut into five Segments, and cloſely covered with five Hairs. The Petals are large, entire, and of a purple blue Colour. It flowers in *June*, *July*, *Auguſt*, and *September*, and the Flowers are ſucceeded by Seeds, having ſhort hairy Beaks.

The 22d Sort has ſome Appearance of the 21ſt, but the Leaves are of a thicker Subſtance, divided into many acute Angles, and have purple Edges, which are acutely indented. The Stalks and Leaves are very hairy. The Branches are not ſo irregular as thoſe of the former, nor are the Bunches of Flowers near ſo large; theſe Differences are permanent in the Plants which are raiſed from Seeds, ſo it is undoubtedly a diſtinct Species, though Dr. *Linnæus* ſuppoſes them to be the ſame.

The 23d Sort comes from the *Cape of Good Hope*, but is one of the oldeſt, and moſt common in the *Engliſh* Gardens; this riſes with a ſhrubby Stalk, 4 or 5 Feet high, and divides into a great Number of irregular Branches, ſo as to form a large Head, which is often 8 or 10 Feet high. The Branches are garniſhed with roundiſh Heart-ſhaped Leaves, indented on their Edges in ſeveral obtuſe Segments, which are cut into ſhort Teeth at their Brims; theſe have a purple Circle, or Mark, like a Horſeſhoe, through the Leaf, going from one Side of the Baſe to the other, correſponding with the Border of the Leaf; theſe Leaves, when gently rubbed, have a Scent like ſcalded Apples. The Flowers are produced in pretty cloſe Bunches, ſtanding upon Foot Stalks about five or ſix Inches in Length, which comes out from the Wings of the Stalk, toward the End of the Branches, they are of a reddiſh purple Colour, and continue in Succeſſion great Part of Summer; there is a Variety of this with fine variegated Leaves, which is preſerved in moſt of the *Engliſh* Gardens, for the Beauty of its Leaves, but as this accidentally came from the other, it is not a diſtinct Species, therefore I have not enumerated it.

The 24th Sort grows naturally at the *Cape of Good Hope*; this riſes with a ſoft ſhrubby Stem to the Height of 8 or 10 Feet, ſending out ſeveral Branches, which are generally erect; theſe are garniſhed with roundiſh Kidney-ſhaped Leaves, of a thick Subſtance, and of a lucid green, ſtanding on pretty long Foot Stalks; they are covered with ſoft Hairs on their under Side, and are placed without any Order. The Flowers grow in looſe Bunches upon long ſtiff Foot Stalks, which come out from the Wings of the Stalk; they are of a bright ſcarlet Colour, ſo make a fine Appearance, and there is a Succeſſion of Flowers during all the Summer Months.

The 25th Sort grows naturally at the *Cape of Good Hope*, but has been many Years an Inhabitant of the *Engliſh* Gardens; this riſes with a ſhrubby Stalk 4 or 5 Feet high, dividing into ſeveral weak irregular Branches, garniſhed with Leaves divided into 3 unequal Lobes, which are hairy and waved on their Edges; they are placed alternate on the Branches, and ſtand upon hairy Foot Stalks. The Flowers grow in cloſe roundiſh Heads on the Top of the Foot Stalks, forming a Sort of *Corymbus*; they are of a purpliſh blue Colour, and continue in Succeſſion great Part of the Summer. The Leaves of this Sort, when rubbed, have an Odour like dried Roſes, from whence many have given it the Title of Roſe *Geranium*.

The 26th Sort is a Native of the *Cape of Good Hope*; this riſes with an upright ſhrubby Stalk to the Height of 7 or 8 Feet, ſending out many pretty ſtrong Branches, garniſhed with Leaves ſhaped ſomewhat like thoſe of the Vine; thoſe on the lower Part ſtand upon long Foot Stalks, but the upper have ſhort ones; when the Leaves of this are rubbed, they have a Scent of Balm. The Flowers grow in compact Cluſters on the Top of long naked Foot Stalks, which come out from the Wings of the Stalk, but riſe much higher than the Branches, they are ſmall, and of a pale blue Colour, ſo make no great Figure, but there is a Succeſſion of them moſt Part of the Summer.

The 27th Sort riſes with an upright ſhrubby Stalk, 7 or 8 Feeet high, ſending out ſeveral Side Branches, garniſhed with large, angular, rough Leaves, ſtanding upon long Foot Stalks. The Flowers are produced in large Panicles at the End of the Branches; theſe are ſhaped ſomewhat like a Butterfly Flower, the two upper Petals, which are pretty large, and turn upward like a Standard in the leguminous Flowers; theſe are finely variegated, but the 3 under Petals are ſo ſmall, as not to appear at a ſmall Diſtance; theſe are reflexed downward, ſo are ſcreened from Sight, unleſs the Flowers are viewed near. This Sort flowers in *May*, at which Time the Plants make a fine Appearance, but they are not ſucceeded by any more afterward, as moſt of the other Sorts are; this grows naturally at the *Cape of Good Hope*.

The 28th Sort is from the ſame Country; this riſes with a ſhrubby Stalk, 6 or 7 Feet high, ſending out ſeveral Side Branches, garniſhed with oblong, oval, fleſhy, ſmooth Leaves, of a gray Colour, which are crenated on their Edges, and have an acid Flavour like Sorrel: The Flowers ſtand upon pretty long Foot Stalks, which ariſe from the Wings of the Stalks, each ſuſtaining 3 or 4 Flowers, whoſe Petals are narrow, and unequal in Size; they are of a pale bluſh Colour, with ſome Stripes of a light red; theſe continue in Succeſſion moſt Part of the Summer. There is a Variety with ſcarlet Flowers, which is ſaid to have been raiſed from the Seeds of this Sort. The Leaves of it are larger, and ſeem to be an intermediate Species between this and the 24th Sort, for the Flowers are larger than thoſe of the 28th Sort, and are of a pale Scarlet Colour.

The 29th Sort hath a thick, fleſhy, knotted Stalk, which riſes about 2 Feet high, ſending out a few ſlender fleſhy Branches, garniſhed thinly with double winged Leaves, which, on the lower Part of the Stalk, ſtand upon Foot Stalks, but thoſe above ſit cloſe to the Branches. The Flowers are produced in ſmall Cluſters at the End of the Branches; theſe have five narrow white Petals, which make no Appearance, they continue in Succeſſion moſt Part of the Summer. It grows naturally at the *Cape of Good Hope*.

The 30th Sort hath a round fleſhy Stalk with ſwelling Knots at the Joints, which riſe about 3 Feet high, and ſend out ſeveral irregular Branches, which are ſmooth; they are thinly garniſhed with ſmooth, fleſhy winged Leaves, ending in obtuſe Points; they are of a gray Colour, and ſtand upon ſhort Foot Stalks. The Flowers ſtand 4 or 5 upon each Foot Stalk, which ariſes from the wings of the Stalk, and are of a dark purple Colour. The Petals are broader than thoſe of the former Sort, and have a very agreeable Scent in the Evening, after the Sun has left them ſome Time; this and the former Sort are ſuppoſed to be one Species by Dr. *Linnæus*, but they are very different in many Particulars, which are permanent in the Plants which come up from Seeds.

The 31ſt Sort hath a fleſhy Stalk, which ſeldom riſes a Foot high, and puts out very few Branches; theſe are garniſhed with ſmooth, light, green Leaves, divided into 3 Parts; the middle Segment being much larger than the others. The Flowers ſtand upon ſhort Foot Stalks, each ſuſtaining 2 or 3 Flowers on the Top, which are of a very deep ſcarlet Colour, and have unequal Petals; this Sort is not regular in its Seaſon of flowering, ſometimes in Spring, at other Times in Summer, and frequently in Autumn. The Leaves of this Sort fall off, ſo that the Stalks are frequently deſtitute of them for three or four Months in Summer, and appear as if they were dead, but in Autumn they put out freſh Leaves again.

The 32d Sort hath many weak ſhrubby Stalks, which require Support to prevent their falling on the Ground; theſe extend to the Length of 2 or 3 Feet, and are garniſhed with fleſhy Leaves, divided into five obtuſe Lobes, which are entire; theſe have ſlender Foot Stalks, which are faſtened to the Middle of the Leaf, like the Handle of a Target. The Leaves are ſmooth, of a lucid green, and have a circular purple Mark in their Middle; they have an acid Flavour, and are placed alternate on their Branches. The Flowers are produced upon pretty long Foot Stalks, which come out from the Wings of the Stalk each Foot Stalk ſuſtaining 4 or 5 purple Flowers, compoſed of 5 unequal Petals. This Sort continues a Succeſſion of Flowers moſt of the Summer Months, and frequently ripens Seeds here.

The 33d Sort ſends out ſeveral herbaceous Stalks, about a Foot and a Half in Length, which trail upon the Ground if they are not ſupported; theſe are garniſhed with roundiſh Hand-ſhaped Leaves, which are cut into many Parts, and are very hairy. The Flowers are of a pale bluſh Colour, and ſtand ſeveral together upon very long Foot Stalks; there is a Succeſſion of theſe during all the Summer Months, and the Seeds ripen about a Month after the Flowers are fallen; there is a Variety of this Sort with a dark Circle in the Middle of the Leaves, which is mentioned as a diſtinct Species, but I find it is apt to vary from Seeds.

The 34th Sort hath a very ſhort fleſhy Stalk, which divides near the Ground into ſeveral Heads, each having many Leaves, which ariſe on ſeparate Foot Stalks from the Heads; theſe are Heart-ſhaped, ſoft, and downy, and have a ſtrong Scent like Aniſeed; from theſe Heads come out ſeveral ſlender Stalks, near a Foot in Length, which lie on the Ground, and are garniſhed with rounder Leaves than thoſe near the Root, but of the ſame Texture, and have the like Odour. The Flowers are produced from the Side of theſe Stalks, 3, 4, or 5 ſtanding together upon ſlender Foot Stalks; they are very ſmall and white, ſo make little Appearance, but the Plant is preſerved in Gardens for the Scent of its Leaves.

The 35th Sort hath a thick, roundiſh, tuberous Root, from which ariſe ſeveral hairy Leaves, which are finely divided, almoſt like thoſe of the Garden Carrot; theſe ſpread near the Ground, and between theſe come out the Stalks, which riſe about a Foot high; they are garniſhed with 2 or 3 Leaves of the ſame Sort with thoſe below, but ſmaller, and ſit cloſer to the Stalks; from theſe ariſe 2 or 3 naked Foot Stalks, terminated by a Truſs of yellowiſh Flowers, marked with dark purple Spots, which ſmell very ſweet after the Sun hath left them; theſe are frequently ſucceeded by Seeds, which ripen in Autumn. This is the Sort which has been long cultivated in Gardens, and is known by the Title of *Geranium noctu olens*, or Night-ſcented Crane's-Bill.

The 36th Sort hath a knobed tuberous Root like the laſt, from which come out ſeveral pretty large Leaves, compoſed of many Lobes, ſet along the Mid-rib in the Form of a winged Leaf; theſe are narrow at their Baſe, but very much enlarged at their Ends, which are rounded, and cut all along their Side and Top, into many acute Points; the Stalks which ſuſtain the Flowers, ariſe immediately from the Root, and ſometimes have one or two ſmall Leaves toward the Bottom, where they often divide into two naked Foot Stalks, each being terminated by a Truſs of pale reddiſh Flowers, which ſmell ſweet at Night.

The 37th Sort hath oblong tuberous Roots, from which come out ſeveral decompound winged Leaves, ending in many acute Points, the Segments of theſe Leaves are boader than thoſe of the 35th Sort, and the Leaves are very hairy. The Stalks riſe 18 Inches high, and are garniſhed with a ſingle Leaf at the two lower Joints; theſe are ſingly winged, and the Lobes are narrow, ſtanding at a wider Diſtance, and the Segments are more acute than thoſe of the lower Leaves; at the two lower Knots, or Joints, ariſe two long naked Foot Stalks, each being terminated by a Truſs of yellowiſh Flowers, which have long Tubes, and ſmell ſweet in the Evening when the Sun has left them. This grows naturally at the *Cape of Good Hope*.

The 38th Sort hath a tuberous Root like the former, from which ſpring out many hairy Leaves, finely divided like thoſe of the *Pulſatilla*, they have a hoary Appearance, and riſe immediately from the Root, ſpreading on every Side near the Ground. The Foot Stalk of the Flower is naked, and riſes from the Root; this grows about nine Inches high, and is terminated by a looſe Truſs of Flowers, which are of a very dark purple Colour, and ſmell ſweet in the Evening.

The 39th Sort hath fleſhy tuberous Roots like thoſe of the former Sorts, from which come out 3 or 4 broad Leaves, divided on their Borders into ſeveral Lobes, in Form of a Vine Leaf; theſe ſpread flat on the Ground; they are hairy, and crenated on their Edges, ſtanding upon ſhort Foot Stalks. The Foot Stalks of the Flowers riſe immediately from the Root, and grow about a Foot high; they are naked, and are terminated by a Truſs of dark purple Flowers with long Tubes, ſitting cloſe to the Foot Stalks, which have a very agreeable Odour in the Evening.

Theſe five Sorts of tuberous rooted Crane's-bill, are, by *Linnæus*, ſuppoſed to be but one Species, but I have propagated four of them from Seeds ſeveral Times, and have never found either of them vary from their Parent Plants, ſo I make no doubt of their being diſtinct Species, for their Difference of Leaves is as great as in any of the other Species.

The 40th Sort is an annual Plant, which grows naturally at the *Cape of Good Hope*; this riſes with herbaceous branching Stalks, near a Foot high, garniſhed with doubly winged Leaves at each Joint; the lower Leaves ſtand upon long Foot Stalks, but thoſe on the upper Part ſit cloſe to the Stalks. The Flowers ſtand upon naked Foot Stalks, which proceed from the Side of the Stalks, on the oppoſite Side to the Leaves; they grow 3 or 4 together upon ſhort ſeparate Foot Stalks; theſe are ſhaped ſomewhat like a papilionaceous Flower; the two upper Petals, which are large, form a Kind of Standard, the other three Petals are narrow, and reflexed downward; they are of a pale Fleſh Colour, appearing in *July*, and the Seeds ripen in *September*, ſoon after which the Plants decay.

The 41ſt Sort hath a pretty thick tuberous Root, from which is ſent out ſeveral irregular Stalks, which divide into Branches, and grow diffuſed; theſe have ſwelling Joints, and are ſomewhat ligneous; they are garniſhed with one double winged Leaf at each of the Joints, and oppoſite to the Leaves come out the Foot Stalks of the Flowers; thoſe which are ſituated on the lower Part of the Stalk, are very long and naked, but thoſe which terminate the Branches are ſhorter, and have one or two ſmall Leaves ſet at their Baſe; theſe Foot Stalks are terminated by a ſmall Truſs of Flowers, ſhaped like thoſe of the former Sort, but larger, and of a paler Colour; theſe continue in Succeſſion moſt Part of the Summer; this and the former Sort, are ſuppoſed to be the ſame by Dr. *Linnæus*, but the former is an annual Plant in every Country, periſhing ſoon after the Seeds are perfected, and this latter is an abiding Plant with ligneous Stalks.

The 42d Sort is a biennial Plant, which grows naturally at the *Cape of Good Hope*; this ſends out a great Number of very ſlender trailing Stalks, which are proſtrate on the Ground, and extend a Foot and a Half in Length; they are garniſhed with ſmall, roundiſh, Hand-ſhaped Leaves, which are crenated on their Edges. The Flowers ſit upon ſhort ſlender Foot Stalks, which come out at every Joint from the Side of the Stalks; they are very ſmall, and of a reddiſh Colour; ſometimes they are ſingle, and at other Times there are two or three Flowers upon a Foot Sralk. They continue in Succeſſion all the Summer, and the Seeds ripen in about five Weeks after the Flowers decay.

The 43d Sort hath a ſhrubby Stalk, which riſes 4 or 5

5 Feet, ſending out ſeveral Branches, garniſhed with oblong Leaves, indented; and unequally ſawed on their Edges, the Flowers ſtand on long Foot Stalks, which come out from the Side of their Branches; they are large, of a red Colour, and the two upper Petals are larger than the other, this Sort flowers in *June* and *July*.

All the Sorts of *African* Crane's-bill may be propagated by Seed; theſe may be ſown upon a Bed of light Earth toward the End of *March*, where the Plants will appear in a Month or five Weeks after, and by the Beginning of *June* the Plants will be fit to remove, when they ſhould be carefully taken up, and each planted in a ſeparate Pot, filled with light Kitchen Garden Earth, and placed in a ſhady Situation till they have taken new Root, then they may be removed into a ſheltered Situation, and placed among the hardier Green-houſe Plants, where they may remain till Autumn, when they muſt be removed into the Green-houſe, and treated as other hardy Kinds of Green-houſe Plants.

But thoſe who are deſirous to have their Plants large, and flower ſoon, ſow the Seeds upon a moderate hot Bed in the Spring, on which the Plants will come up much ſooner, and will be fit to remove long before thoſe which are ſown in the open Air; but when theſe Plants come up, there muſt be great Care taken not to draw them up weak; and when they are tranſplanted, the Pots ſhould be plunged into another moderate hot Bed, obſerving to ſhade them from the Sun till they have taken new Root, then they muſt be gradually inured to bear the open Air, into which they ſhould be removed the Beginning of *June*, and placed in a ſheltered Situation with other exotick Plants. If theſe Plants are brought forward in the Spring, moſt of the Sorts will flower the ſame Summer, and the Plants will be very ſtrong before the Winter, ſo will make a better Appearance in the Green-houſe.

The ſhrubby *African Geraniums* from the 21ſt to the 32d incluſive, and alſo the 41ſt and 43d Sorts, are commonly propagated by Cuttings, which, if planted in a ſhady Border, in *June* or *July*, will take good Root in 5 or 6 Weeks, and may then be taken up and planted into ſeparate Pots, placing them in the Shade till they have taken new Root; after which they may be removed into a ſheltered Situation, and treated as the Seedling Plants. The 29th, 30th, 31ſt and 32d Sorts, have more ſucculent Stalks than either of the other, ſo the Cuttings of theſe Sorts ſhould be planted in Pots filled with light Kitchen Garden Earth, and plunged into a very moderate hot Bed, where they ſhould be ſhaded from the Sun in the Heat of the Day, and ſhould have but little Water, for theſe are very apt to rot with much Moiſture, ſo they muſt only be gently refreſhed now and then with Water; when theſe are well rooted, they may be ſeparated and planted into Pots filled with the ſame Sort of Earth, and placed in the Shade till they have taken new Root, then they may be removed into a ſheltered Situation, where they may remain till Autumn. Theſe four Sorts ſhould be ſparingly watered at all Times, but eſpecially in the Winter, for they are apt to take a Mouldineſs with Moiſture, or in a damp Air, they will thrive much better in an airy Glaſs Caſe, than in a Green-houſe, becauſe in the former they will have more ſun and Air, ſo will not be ſo liable to have a Mouldineſs or Rot. But all the other ſhrubby Sorts are proper Furniture for the Green-houſe, where they will only require Protection from Froſt, but ſhould have a large Share of free Air when the Weather is mild; they will require Water every Week, in mild Weather once or twice, but it ſhould not be given them in too great Plenty, eſpecially in froſty Weather. Theſe Plants ſhould be hardened in the Spring gradually, and toward the Middle or latter End of *May*, they may be taken out of the Green-houſe, and at firſt placed under the Shelter of Trees, where they may remain a Fortnight or three Weeks to harden, then ſhould be removed into a Situation where they may be defended from ſtrong Winds, and enjoy the Morning Sun till eleven o'Clock, where they will thrive better than in a warmer Situation.

As theſe ſhrubby Sorts grow pretty faſt, they ſoon fill the Pots with their Roots, and if they ſtand long unremoved in Summer, they frequently put out their Roots through the Holes at the Bottom of the Pots into the Ground, and then the Plants will grow vigorouſly, but when they are ſuffered to grow long in this Manner, it will be difficult to remove them, for if their Roots are torn off, all their younger Branches will decay, and many Times the Plants are killed. Therefore the Pots ſhould be moved once in a Fortnight or three Weeks, and the Roots which may be then puſhing through the Holes cut off, to prevent their ſtriking into the Ground. Theſe Plants will alſo require to be new potted at leaſt twice in the Summer; the firſt Time ſhould be after they have been three Weeks or a Month out of the Green-houſe; the ſecond ſhould be towards the End of *Auguſt*, or Beginning of *September*, that the Plants may have Time to eſtabliſh their new Roots before they are removed into the Green-houſe.

When theſe are new potted, all the Roots on the Outſide of the Balls of Earth, ſhould be carefully pared off, and as much of the old Earth drawn away from the Roots, as can be done with Safety to the Plants; then if they require it, they ſhould be put into Pots a Size larger than thoſe out of which they were taken, putting a Quantity of freſh Earth into the Bottom of the Pot; then place the Plants upon that, being careful the Ball about the Roots of the Plant, is not ſo high as the Rim of the Pot, that ſome Room may be left to contain the Water which may be given to the Plant. Then the Cavity all round the Ball ſhould be filled up with freſh Earth, which ſhould be gently preſſed down, and the Bottom of the Pot beaten upon the Ground, to ſettle down the Earth, then the Plant ſhould be well watered, and the Stem faſtened to a Rail, to prevent the Wind from diſplacing the Roots, before they are fixed in the new Earth.

The Compoſt in which I have always found theſe Plants thrive beſt (where there has not been a Conveniency of getting ſome good Kitchen Garden Earth) was freſh Hazel Loam from a Paſture mixed with a fourth or fifth Part of rotten Dung; if the Earth is inclinable to bind, then a Mixture of rotten Tan is preferable to Dung, but if it is right and warm, then a Mixture of Neat's Dung is beſt; this Compoſt ſhould be mixed three or four Months before it is uſed, and ſhould be turned over three or four Times, that the Parts may be well mixed and incorporated, but where a Quantity of good Kitchen Garden Earth can be had, which has been well worked and is clean from the Roots of bad Weeds, there will need no Compoſition, for in that they will thrive full as well as in any Mixture which can be made for them, eſpecially if the Earth has lain in a Heap for ſome Time, and has been two or three Times turned over to break the Clods, and make it fine; theſe Plants ſhould not be planted in very rich Earth, for that will cauſe them to grow very luxuriant, but they will not flower ſo well as in a poorer Soil.

The 33d Sort hath herbaceous Stalks, ſo is beſt propagated by Seeds, which the Plants produce in great Plenty, but the Cuttings of this will take Root as freely as either of the other, but the ſeedling Plants are preferable to thoſe propagated by Cuttings, and where the Seeds of this and many other of the *African* Sorts are permitted to ſcatter, there will be a Supply of young Plants come up the Spring following, provided the Seeds are not buried too deep in the Ground.

The 34th Sort may be propagated by Seeds, or from Heads ſlipped off from the ſhort fleſhy Stalk; theſe Heads ſhould have their lower Leaves ſtripped off, that the Stalk which is to be planted may be clear of Leaves; then they may be planted ſingle into a ſmall Pot, or if the Heads are ſmall, there may be two or three put into one ſmall Pot, then they may be plunged into a very moderate hot Bed, which will forward their putting out Roots, and if they are ſhaded from the Sun and gently refreſhed with Water, they will take Root in a Month or five Weeks, when they muſt be hardened gradually, and removed into the open Air, where they may remain till Autumn, when they muſt be removed into Shelter for the Winter Seaſon.

The 35th, 36th, 37th, 38th and 39th Sorts are generally propagated by parting their Roots, the beſt Time for doing this is in *Auguſt*, that the young Roots may be eſtabliſhed before the Cold comes on. Every Tuber of theſe Roots will grow, provided they have a Bud or Eye to them; theſe may be planted in the ſame Sort of Earth as was before directed, and if the Pots are plunged into an old Tan Bed, under a good Frame in Winter, the Plants will thrive better than in a Green-houſe; the Glaſſes of the Frame may be drawn off every Day in mild Weather, whereby the Plants will enjoy the free Air, and if in hard Froſt, the Glaſſes are well covered to prevent the Cold penetrating to the Plants, it is all the Shelter they will require; but in this Situation, they ſhould have but little Wet in Winter, therefore the Glaſſes ſhould be kept over them in heavy Rains to keep them dry; but in mild Weather the Glaſſes may be raiſed on the upper Side to admit freſh Air to the Plants, which will give them greater Slope to carry off the Wet. With this Management the Roots will thrive and flower very ſtrong every Year. Theſe Sorts may alſo be propagated by Seeds.

The 40th Sort is an annual Plant, and is only propagated by Seeds, which ſhould be ſown upon a gentle hot Bed in Spring, to bring the Plants forward, otherwiſe if the Seaſon ſhould not prove very warm, the Plants will not perfect their Seeds in this Country. When the Plants are come up, and grown ſtrong enough to remove, they ſhould be each planted into a ſmall Pot, and plunged into a moderate hot Bed again, obſerving to ſhade them till they have taken new Root, then they muſt be gradually hardened to bear the open Air, into which they ſhould be removed in *June*, and when the Plants have filled the ſmall Pots with their Roots, they ſhould be ſhaken out, and the Ball of Earth preſerved to their Roots, and put into Pots a Size larger, in which they will flower and ripen Seeds, and ſoon after the Plants will decay.

The 42d Sort is alſo propagated by Seeds, which may be either ſown upon a moderate hot Bed in Spring, or upon a Bed of light Earth in the open Air, where the Plants will come up very well, though they will not be ſo forward as thoſe on the hot Bed. Thoſe which are ſown in the open Air will require no other Care, but to keep them clean from Weeds, and thin the Plants where they are too cloſe. Theſe Plants will flower in *July* and *Auguſt*, and if the Autumn proves favourable the Seeds will ripen in *September*, but if theſe ſhould fail, thoſe which were raiſed on the hot Bed will come earlier to flower, ſo there will be no Danger of their perfecting Seeds, and theſe Plants, if they are in Pots, may be preſerved through the Winter, if they are plunged into an old Tan Bed under a Frame, and treated as the tuberous rooted Sorts before mentioned.

The ſhrubby Sorts muſt be looked over frequently during the Winter, while they are in the Green-houſe, to pick off all decayed Leaves from them, which, if left on, will not only render the Plants unſightly, but by their falling off, they will occaſion Litter among the other Plants, and if they are ſuffered to rot in the Houſe, they will occaſion a foul, damp Air, which will be very prejudicial to all the Plants, therefore to avoid this, they ſhould be conſtantly picked off every Week; and during the Summer Seaſon they will require to be picked every Fortnight or three Weeks to keep them clean from dead Leaves; for as the Branches advance, and new Leaves are produced on their Top, the under Ones as conſtantly decay, and if left on till they drop off, will render the Plants very unſightly.

GERMANDER. *See* Teucrium.

GESNERA. *Plumier Nov. Gen.* 27. *Tab.* 9 *Lin. Gen. Plant.* 667. So named by Father *Plumier*, who diſcovered it in *America*, in Honour of *Conrad Geſner*, a very learned Botaniſt, and natural Hiſtorian.

The *Characters* are,

The Empalement of the Flower is of one Leaf, cut into five acute Parts at the Top, and is permanent, in which is ſituated the Germen; the Flower hath one Petal which is tubulous and firſt bent inward, and afterward out again like a Bugle Horn; the Brim is divided into five obtuſe Segments which are equal; it hath four Stamina which are ſhorter than the Petal, terminated by ſingle Summits, the Germen which ſits under the Petal ſupports a ſingle crooked Style, crowned by a headed Stigma. The Germen afterward becomes a roundiſh Capſule, with two Cells, filled with ſmall Seeds, which are fixed on each Side the Partition.

The *Species* are,

1. GESNERA *foliis lanceolatis crenatis hirſutis, pedunculis lateralibus longiſſimis paniculatis.* *Geſnera* with hairy Spear-ſhaped Leaves, which are crenated, and very long Foot Stalks ſupporting a Panicle of Flowers proceeding from the Sides of the Stalk. This is the *Geſnera amplo digitalis folio, tomentoſo. Plum. Nov. Gen.* 27. *Geſnera* with a large woolly Fox-glove Leaf.

2. GESNERA *foliis lanceolatis ſerratis ſeſſilibus, pedunculis ramoſis multifloris. Lin. Sp. Plant.* 612. *Geſnera* with Spear-ſhaped ſawed Leaves ſitting cloſe to the Stalks, and branching Foot Stalks having many Flowers. This is the *Geſnera humilis flore flaveſcente. Plum. Nov. Gen.* 27. Low *Geſnera* with a yellowiſh Flower.

The 1ſt Sort grows naturally in the *Weſt-Indies*; the Seeds were ſent me from *Jamaica*, which ſucceeded in the *Chelſea* Garden; this riſes with a ſhrubby Stalk 6 or 7 Feet high, which divides into 2 or 3 irregular Branches, covered with a ruſſet Wool, and garniſhed with hairy Leaves 7 or 8 Inches long, and two and a Half broad in the Middle, having a ruſſet woolly Midrib, and the Edges are crenated; theſe are placed on every Side the Branches without Order, and have ſhort Foot Stalks; towards the End of the Branches come out the Foot Stalks of the Flowers at every Joint, ariſing from the Wings of the Stalk; theſe are naked and nine Inches in Length, branching at the Top into many ſmaller Foot Stalks, each ſuſtaining a ſingle Flower having a ſhort crooked Tube, indented at the Top in five obtuſe Parts, and of an obſolete purple Colour. Theſe are ſucceeded by roundiſh Capſules ſitting cloſe in the Empalement, the Diviſions of which ariſe above the Capſule, which Dr. *Linnæus*, from *Plumier*'s Figure, has taken for the Empalement ſitting upon the Capſule, whereas the Capſule is diſtinct from the Empalement and is incloſed by it. The Capſule is divided into two Cells filled with ſmall Seeds. It flowers here in *July* and *Auguſt*, but hath not ripened Seeds.

The 2d Sort is a Plant of humbler Growth, this ſeldom riſes more than 3 Feet; the Leaves are much ſmaller, ſawed on their Edges, and ſit cloſe to the Stalk, the Flowers ſtand on branching Foot Stalks, each ſuſtaining many yellowiſh Flowers, which are deeper cut at their Brims than thoſe of the firſt Sort. This was found growing naturally at *Carthagena* in *New Spain.*

There is a third Species of this Genus mentioned by *Plumier* which grows to a Tree, and hath ſpotted and fringed Flowers, but this I have not ſeen in any of the *Engliſh* Gardens. Theſe Plants are propagated by Seeds, which muſt be procured from the Countries where they grow naturally; theſe ſhould be brought over in their Capſules, which is the beſt Way to preſerve the Seeds good, for as they are very ſmall and light, ſo when they are ſeparated from the Partition to which they adhere, they ſoon loſe their vegetative Quality; I have received the Seeds ſeveral Times from *America*, which were taken out of the Veſſels, but not one of them grew, till I had ſome ſent in their Veſſels which ſucceded very well.

The Seeds ſhould be ſown in Pots filled with light Earth, and plunged into a hot Bed of Tanners Bark, as ſoon as they arrive, for they ſometimes lie long in the Ground; thoſe which I have ſown in Autumn, came up the following Spring; therefore when they happen to arrive here at that Seaſon, the Pots in which the Seeds are ſown, ſhould be plunged into the Tan Bed in the Stove, and during the Winter the Earth ſhould be now and then gently watered, to prevent its drying too much, but it muſt not be too moiſt. In Spring the Pots ſhould be removed out of the Stove, and plunged into a freſh hot Bed, which will bring up the Plants ſoon after. When theſe are fit to remove, they ſhould be each planted into a ſeparate Pot, and plunged into a good hot Bed of Tan, obſerving to ſhade them till they have taken new Root, then they muſt be treated as other tender Plants from the ſame Countries.

In Autumn they muſt be plunged into the Tan Bed in the Stove, where, during Winter, they ſhould have but little Water, for if they receive much Wet, it will deſtroy them. In this Stove the Plants muſt conſtantly remain, for they will not thrive if they are kept out of the Tan. In Summer they ſhould have free Air admitted at all Times when the Weather is warm, and they muſt be frequently refreſhed with Water during that Seaſon, but it muſt not be given in too great Plenty. As the Plants advance in Growth they require larger Pots, but there muſt be Care taken not to over pot them, for they will not thrive in large Pots. With this Management the Plants will flower the ſecond Year, and may be continued 3 or 4 Years, but they are not of long Duration in their native Country.

GEUM. *Lin. Gen. Plant.* 561. *Caryophyllata. Tourn. Inſt. Avens*, or Herb Bennet; in *French*, *Benoite.*

The *Characters* are,

The Flower hath a one-leaved Empalement, which is cut at the Top into ten Segments, which are alternately ſmaller than the other. The Flower has five roundiſh Petals, which are narrow at their Baſe, where they are inſerted in the Empalement; *it hath a great Number of Awl-ſhaped Stamina, which are the Length of the Empalement, into which they are inſerted, and are terminated by broad obtuſe Summits. In the Center of the Flower is ſituated a great Number of Germina collected into a Head*; *theſe have Styles inſerted in their Sides, which are long, hairy, and crowned by ſingle Stigmas. The Germina afterward become ſo many flat rough Seeds, which are hairy, and have the Style which is bent like a Knee adhering to them*; *theſe ſit in the common Empalement.*

The *Species* are,

1. GEUM *floribus erectis, fructu globoſo, ariſtis uncinatis nudis, foliis lyratis. Hort. Cliff.* 195. *Geum* with erect Flowers, a globular Fruit, naked hooked Beards, and Harp-ſhaped Leaves. This is the *Caryophyllata vulgaris. C. B. P.* Common *Aveus* or Herb Bennet.

2. GEUM *floribus nutantibus, fructu oblongo, ariſtis plumoſis. Hort. Cliff.* 195. *Geum* with nodding Flowers, and an oblong Fruit with feathery Beards. This is the *Caryophyllata aquatica, nutante flore. C. B. P.* 321. Aquatick Herb Bennet with a nodding Flower.

3. GEUM *floribus nutantibus, fructu globoſo, ariſtis nudis, foliis lyratis, foliolis rotundioribus. Geum* with nodding Flowers, a globular Fruit with naked Beards, and Harp-ſhaped Leaves with rounder Lobes. This is the *Caryophyllata Pyrenaica, ampliſſimo & rotundiori folio, nutante flore. Tourn. Inſt.* 295. *Pyrenean Avens* with a very large and rounder Leaf, and a nodding Flower.

4. GEUM *flore erecto ſolitario, fructu oblongo, ariſtis plumoſis. Lin. Sp. Pl.* 501. *Geum* with a ſingle upright Flower, and an oblong Fruit with feathery Beards. This is the *Caryophyllata montana flore luteo magno. I. B.* Mountain *Avens* with a large yellow Flower.

5. GEUM *flore ſolitario erecto, fructu globoſo, ariſtis*

tenuioribus nudis. *Geum* with a ſingle erect Flower, and a globular Fruit with narrower naked Beards. This is the *Caryophyllata alpina minor. C. B. P.* 322. Smaller *Alpine Avens.*

6. Geum *floribus erectis, fructu globoſo, ariſtis uncinatis nudis. foliis ternatis. Hort. Cliff.* 195. *Geum* with upright Flowers, a globular Fruit with naked Beards and trifoliate Leaves. *Caryophyllata Virginiana, albo flore minore, radice inodorâ H. L.* 111. *Virginia Avens* with a ſmaller white Flower, and a ſcentleſs Root.

The firſt Sort grows plentifully by the Side of Hedges, and in Woods in moſt Parts of *England,* ſo is rarely admitted into Gardens. This ſtands in the Liſt of Medicinal Plants, the Root is the only Part uſed; this is eſteemed Cephalick and Alexipharmick and is manifeſtly of a binding Nature, ſo is uſeful in all Fluxes, *&c.*

The 2d Sort grows naturally in moiſt Meadows in the northern Parts of *England.* This is of humbler growth than the firſt, the lower Leaves have two Pair of ſmall Lobes at Bottom, and three large ones at the Top, that which terminates being the largeſt. The Leaves upon the Stalks, are compoſed of three acute Lobes which ſit cloſe to the Stalk; the Flowers are of a purpliſh Colour, and nod on one Side, they appear in *May,* and the Seeds ripen in *July.*

The 3d Sort grows upon the *Alps,* and alſo on the Mountains in the North, this hath ſome Reſemblance to the ſecond Sort, but the Leaves are much larger and rounder, and are indented on their Edges; the Flowers are larger and of a Gold Colour. This flowers about the ſame Time as the ſecond.

The 4th Sort grows naturally upon the *Alps,* this hath Leaves much larger than either of the other Species; the lower Leaves are compoſed of three or four Pair of ſmall irregular Pinnæ ſet along the Mid-rib, which is terminated by one very broad roundiſh Lobe, which is crenated on the Edge. The Flowers are large, of a bright yellow Colour, ſtanding ſingle on the Top of the Stalk, which ſeldom riſes more than five or ſix Inches high. It flowers in *May* and *June.*

The 5th Sort grows naturally on the *Alps,* it is a very low Plant, the Flower Stalks are about 3 Inches long, and bend on one Side; they are each terminated by one bright yellow Flower, about the Size of thoſe of the common Sort. This flowers about the ſame Time as the former.

The 6th Sort grows naturally in *North America,* the Stalks riſe 18 Inches high, and branch out at the Top into ſmall Foot Stalks, each being terminated by a ſmall white Flower, the Leaves are trifoliate, and the Root has no Scent. Theſe are all very hardy Plants which require a ſhady Situation, but will thrive in any Soil, they may be eaſily propagated by Seeds which ſhould be ſown in Autumn, for when they are ſown in the Spring, they do not grow the ſame Year.

GILLIFLOWER, or JULYFLOWER. *See* Dianthus.

GILLIFLOWER, or STOCK-GILLIFLOWER. *See* Cheiranthus.

GILLIFLOWER, the Queen's or Dame's Violet. *See* Heſperis.

GINGER. *See* Amomum.

GINGIDIUM. *See* Artedia.

GLADE is an open and light Paſſage made through a Wood, by lopping off the Branches of Trees along that Way.

GLADIOLUS. *Lin. Gen. Plant.* 55. *Tourn. Inſt. R. H.* 365. *Tab.* 190. of *Gladius,* Lat. a Sword; Cornflag; in *French, Glaicul.*

The *Characters* are,

The Flowers are included in Sheaths, which ſtand at a Diſtance from each other; the Petal of the Flower is cut into ſix Parts, three of the upper are near together, the three under ſpread open, but they all form a ſhort incurved Tube with their Baſe; they have three Awl-ſhaped Stamina, which are inſerted into every other Petal, and all of them aſcend to the upper Petal, and are terminated by oblong Summits. The Germen is ſituated below the Flower, ſupporting a ſingle Style the Length of the Stamina, crowned by a concave trifid Stigma. The Germen afterward becomes an oblong ſwelling three cornered Capſule, with three Cells, opening with three Valves, filled with roundiſh Seeds.

The *Species* are,

1. Gladiolus *foliis enſiformibus, floribus diſtantibus. Lin. Sp. Plant.* 36. Cornflag with Sword-ſhaped Leaves, and Flowers ſtanding at a Diſtance. *Gladiolus floribus uno verſu diſpoſitis. C. B. P.* 41. Cornflag with Flowers diſpoſed on one Side the Stalk.

2. Gladiolus *foliis enſiformibus, floribus ancipitibus.* Cornflag with Sword-ſhaped Leaves, and Flowers ſtanding on both Sides the Stalk. *Gladiolus utrinque floribus. C. B. P.* 41. Cornflag with Flowers on each Side the Stalk.

3. Gladiolus *foliis enſiformibus, ſpathis longioribus.* Cornflag with Sword-ſhaped Leaves and longer Sheaths to the Flowers. *Gladiolus major Byzantinus. C. B. P.* 41. Greater Cornflag of *Byzantium,* and the *Gladiolus foliis enſiformibus floribus majoribus diſtantibus. Fig. Plant. Plate* 142.

4. Gladiolus *foliis enſiformibus, floribus maximis incarnatis.* Cornflag with Sword-ſhaped Leaves, and very incarnate Flowers. *Gladiolus maximus indicus. C. B. P.* Greateſt *Indian* Cornflag.

5. Gladiolus *foliis linearibus, floribus diſtantibus, corollarum tubo limbis longiore. Lin. Sp. Pl.* 37. Cornflag with very narrow Leaves, Flowers ſtanding at a Diſtance from each other, and the Tube longer than the Margins of the Petal. *Gladiolus Africanus, folio gramineo, floribus carneis, maculam rhomboideam inſcriptis, uno verſu poſitis. Boerh. Ind. alt.* 2. 127. *African* Cornflag, with a graſſy Leaf, and Fleſh coloured Flowers, marked with a purple rhomboid Spot, ranged all on one Side the Stalk.

6. Gladiolus *foliis linearibus ſulcatis, caule biflorâ, tubo longiſſimo, ſegmentis æqualibus.* Cornflag, with very narrow channelled Leaves, and a Stalk bearing two Flowers with a very long Tube, and equal Segments. *Gladiolus bifolius & biflorus, foliis quadrangulis. Trew. Tab.* 39. Lilly Cornflag with two Leaves and Flowers, and four cornered Leaves.

The 1ſt Sort grows naturally in arable Land, in the warm Countries of *Europe,* and was formerly cultivated in the *Engliſh* Gardens, where the Roots have multiplied ſo greatly as to become a moſt troubleſome Weed, and very difficult to eradicate; this hath a round compreſſed tuberous Root of a yellowiſh Colour, and covered with a brown furrowed Skin, like thoſe of the large yellow vernal Crocus; from the Root ariſe two flat Sword-ſhaped Leaves, which embrace each other at their Baſe, and between theſe ariſe the Flower Stalk which grows near 2 Feet high, having one or two narrow Leaves embracing it like a Sheath; the Stalks are terminated by 5 or 6 purple Flowers, ſtanding above each other at ſome Diſtance, and ranged on one Side of the Stalk; each of theſe has a Spatha (or Sheath) which covers the Flower Bud before it expands, but ſplits open lengthways when the Flowers blow, and ſhrivel up to a dry Skin, remaining about the Seed Veſſel till the Seeds are ripe. The Flower hath but one Petal, which is cut almoſt to the Bottom in 6 Parts, ſo as to appear like a Flower of 6 Petals; the three upper Segments ſtand near together, and riſe like a labiated Flower; the under one turns downward, and the two Side Segments form the Chaps of the Flower, and ſpread open at the Top, but are curved downward at the Bottom. They are ranged along one Side of the Stalk, and are of a purpliſh red Colour. This flowers the latter End of *May*, and in *June*, and the Seeds ripen the Beginning of *Auguſt*; it requires no Care, for when it is once planted in a Garden, it will multiply too faſt.

There is a Variety of this with white Flowers, and another with Fleſh coloured Flowers, which have accidentally riſen from Seeds, ſo are not different Species.

The 2d Sort differs from the firſt, in having the Flowers ranged on both Sides the Stalk, but in other Reſpects, it is very like to that; of this there is a Variety with white Flowers, but theſe are not ſo common in the *Engliſh* Gardens as the former.

The 3d Sort hath larger Roots than either of the former, but are of the ſame Form; the Leaves are alſo much broader and longer, the Veins or Channels of the Leaves deeper; the Flower Stalks riſe higher; the Flowers are much larger and of a deeper red than thoſe of the former Sorts, and the Sheaths longer. This Plant makes a fine Appearance in flower, ſo is worthy of a Place in every good Garden, and the rather, becauſe the Roots do not increaſe ſo faſt as to become troubleſome in the Borders. This is propagated by Offſets, which are ſent off from the Roots, in the ſame Manner as Tulips. The Roots may be taken out of the Ground the End of *July*, when their Stalks decay, and may be kept out till the latter End of *September*, or the Beginning of *October*, at which Time they ſhould be planted in the Borders of the Flower Garden, where they will thrive in any Situation, and being intermixed with other Flowers of the ſame Growth, will add to the Variety.

The 4th Sort grows naturally at the *Cape of Good Hope*, from whence I have ſeveral Times received the Seeds. This has been many Years cultivated in the *Engliſh* Gardens, but very rarely flowers here; for in near thirty Years that I have cultivated this Sort, I have never ſeen it but once in flower, though I have kept it in all Situations and planted it in various Soils. The Roots increaſe very faſt, but will not live in the open Air through the Winter in this Country. The Roots of this Sort are broader and flatter than thoſe of any of the other Sorts, and are covered with a netted Skin; the Leaves come out in the ſame Manner embracing each other like the former Sorts; they are longer, ſmoother, and of a brighter green, than any of the others; theſe begin to appear in *September*, and continue growing in Size till after *Chriſtmas*; they begin to decay in *March*, and the latter End of *May* are quite withered, when the Roots may be taken up, and kept out of the Ground till *Auguſt*; the Time of its flowering is in *January*. The Flowers of this Sort are placed on each Side the Stalk, and ſit cloſe to it like the Grains of the Flat Barley, the Sheaths between the Flowers are not ſo long as thoſe of the other Sorts, and form a Kind of ſcaly Covering to them. The Flowers are of a bright red Colour without, but the three lower Segments are yellowiſh within, with a few ſcarlet Stripes. The Flowers do not all open at the ſame Time, but the lower ones decay before thoſe on the upper Part of the Spike are in Beauty, however they make a fine Appearance at a Seaſon when all Flowers are valuable.

This Sort propagates by Offsets very faſt, theſe ſhould be planted in Pots filled with light Kitchen Garden Earth, and placed in a Green-houſe in Winter to protect them from Froſt, but they do not require any artificial Warmth, for I have with a ſlight Shelter preſerved them through the Winter in the full Ground, when the Froſt has not been very ſevere; and I have always found that thoſe Plants which were hardily treated, grew much ſtronger than thoſe which were placed in a moderate Degree of Warmth; ſo where there is a Conveniency of covering a warm Border with Glaſſes in the Winter; if theſe Roots are planted in that Border, there will be a greater Probability of their flowering, than in any other Method of Culture.

The 5th Sort grows naturally at the *Cape of Good Hope*, from whence I received the Seeds, which ſucceeded in the *Chelſea* Garden, where the Plants annually produce their beautiful Flowers.

This hath a round, ſmooth, bulbous Root, which is covered with a thin dark coloured Skin, from which come out in Autumn 2 or 3 very narrow graſſy Leaves, folded over each other at their Baſe, but open flat above; theſe riſe near 2 Feet high. In the Spring ariſes a ſingle Stalk from between the Leaves, about 2 Feet long, which always bend on one Side; toward the upper Part of this come out 2 or 3 Flowers, ranged on one Side of the Stalk, ſtanding upright, each having a narrow Spatha, or Hood, and long flower Tubes, which ſwell large upward, and are divided into 6 Parts, which are nearly equal. The Flower is of a duſky Fleſh-colour, and each Segment of the Petal has a rhomboidal Mark of a dark red, or purple Colour; afterward the Tube of the Flower opens, the deep Diviſion of the Petals is ſeen, and the 3 Stamina, with their Summits, appear, attended by the Style with its trifid Stigma, ariſing from the Germen. This Plant flowers in *May* and the Beginning of *June*; as it is a Native of a warm Country, it requires Protection from Froſt; therefore the Bulbs ſhould be planted in Pots filled with light Earth, and placed in the Green-houſe in Winter, or where there is not ſuch Conveniency, they may be put under a hot

Bed Frame during that Seaſon, where they may have Air in mild Weather, and be ſcreened from the Froſt; in ſuch Situations I have had them thrive and flower very well.

This is propagated by Offsets from the Root in the ſame Manner as the laſt, and alſo by Seeds, which are frequently perfected in *England*; theſe ſhould be ſown the latter End of *Auguſt*, in Pots filled with light Earth, and placed in a ſhady Situation till the Middle of *September*; then the Pots ſhould be removed where they may have the Sun great Part of the Day, and in *October* they muſt be placed under a hot Bed Frame, to protect them from Froſt and great Rains, but muſt enjoy the free Air in mild Weather. In Spring the young Plants will appear, when they will require a little Water once in 8 or 10 Days, but it ſhould be given them ſparingly, for too much Wet will rot theſe tender Bulbs. In *May*, when the Danger of Froſt is over, the Pots ſhould be removed to a ſheltered Situation, where they may have the Morning Sun till Noon; and if the Seaſon proves dry, they muſt be now and then refreſhed with Water. Toward the latter End of *June*, the Leaves of theſe Plants will decay, then the Roots ſhould be taken up, and may be mixed with Sand, and kept in a dry Room till the End of *Auguſt*, when they ſhould be planted again, and as the Roots are ſmall, 4 or 5 may be planted into each Halfpenny Pot, filled with light Earth; theſe ſhould be placed where they may have only the Forenoon Sun, till the Middle of *September*, when they ſhould have a warmer Situation, and in *October* they muſt be placed under a hot Bed Frame as before, and treated in the ſame Way during the Winter Seaſon; in the Spring they muſt be placed in the open Air till their Leaves decay, when they may be again taken out of the Ground, and treated as before; but as the Roots will have grown to a larger Size, ſo when they are planted again, they ſhould each have a ſeparate Halfpenny Pot, becauſe now they will be large enough to flower, ſo may be treated as the old Roots.

The 6th Sort is alſo a Native of the *Cape of Good Hope*, from whence I received the Seeds; the Root of this Sort is oval, not compreſſed as thoſe of the common Sorts. The Leaves are very long and narrow, having two deep Furrows running the whole Length, the Mid-rib riſing very prominent, ſo as to have the Appearance of a four-cornered Leaf. The Leaves are ſingle, and are wrapped cloſe about the Flower Stalk at their Baſe to a conſiderable Length; there are ſeldom more than two of theſe Leaves from one Root; the Stalk is ſlender and round, and riſes about 2 Feet high, and at the Top is garniſhed with 2 Flowers, placed about 2 Inches and a Half aſunder on the ſame Side of the Stalk, each have a ſhort Spatha, or Sheath, embracing the Germen and the Baſe of the Tube, which is long, narrow, and recurved, but enlarges greatly before it is divided. The upper Part of the Flower is cut into ſix equal Segments, which end in acute Points of a purpliſh Colour, which form a Stripe through the Middle of each Segment. The Petal is of a Cream Colour, and fades to a Sulphur Colour before it decays. This flowers in *June*, and ſometimes the Seeds ripen well in *England*. This may be propagated by Offsets from the Root, or by Seeds as the 5th Sort, and the Plants require the ſame Treatment.

GLANDIFEROUS Trees are ſuch Trees as bear Maſt; as Acorns, *&c.*

GLANDULOUS Roots are ſuch Roots as grow Kernel-wiſe.

GLANS is that Sort of Fruit which is contained within a ſmooth, but hard Bark, having but one Seed; its hinder Parts covered with a Kind of Cup, the fore Part being bare, as Acorns; but it is properly the Fruit without the Cup.

GLASTENBURY THORN. *See* Meſpilus.

GLAUCIUM. *See* Chelidonium.

GLAUX, Sea Chickweed, or Milkwort, and black Saltwort, is a low trailing perennial Plant, with Leaves ſomewhat like Chickweed, but of a thicker Conſiſtence, which ſit cloſe to the Stalks. The Flowers come out from the Boſom of the Leaves, they are white, and like thoſe of Chickweed. This is ſeldom cultivated in Gardens, ſo I ſhall not trouble the Reader with a further Account of it. This grows upon the Sea Shores in moſt Parts of *England*.

GLECHOMA. Ground Ivy, Gill go by the Ground, Ale Hoof, or Turn Hoof.

This Plant grows naturally under Hedges, and upon the Sides of Banks in *England*, but is rarely cultivated in Gardens, ſo I ſhall paſs over it here.

GLEDITSIA. *Lin. Gen. Plant.* 1025. *Acacia. Raii. Meth.* 161. Honey Locuſt, or three-thorned *Acacia*.

The *Characters* are,

It hath male and hermaphrodite Flowers in the ſame Katkin, and female Flowers in different Plants. The male Katkins are long, compact, and cylindrical, they have each a three leaved ſmall Empalement; they have 3 *roundiſh Petals, which ſpread open in Form of a Cup; theſe have a turbinated Nectarium, whoſe Mouth afterward grows to the Parts of Fructification; they have* 6 *ſlender Stamina, which are longer than the Petals terminated by oblong compreſſed Summits. The hermaphrodite Flowers in the ſame Katkin, are ſituated at the End; theſe have Empalements, Petals, and Stamina like the male, and have a Germen, Style, and Seeds like the female, which are ſituated on different Trees, and are diſpoſed in a looſe Katkin; theſe have a five leaved Empalement, and have* 5 *oblong Petals, with* 2 *ſhort Thread-like Nectariums, and a broad Germen longer than the Petals, ſupporting a reflexed Style, crowned by a thick Stigma. The Germen becomes a large flat Pod, with ſeveral tranverſe Partitions, having a Pulp in each Diviſion, ſurrounding one hard roundiſh Seed.*

The *Species* are,

1. GLEDITSIA *ſpinis ternatis, foliis pinnatis, ſiliquis latis longiſſimis caule arboreo. Gleditſia* with three Thorns, winged Leaves, very long broad Pods, and a Tree-like Stalk. *Acacia Americana abruæ folio triacanthos, ſive ad axillas foliorum, ſpinâ triplici donatâ. Pluk. Mant.* 1. Three thorned *American Acacia*.

2. GLEDITSIA *ſpinis paucioribus, foliis pinnatis, ſiliquis ovalibus. Gleditſia* with fewer Spines, winged Leaves, and oval Pods. *Acacia Abruæ folio triacanthos, capſulâ ovali unicum ſemen claudente. Cateſb. Car.* 1. p. 43. Three thorned *Acacia* with an Abrus Leaf, and an oval Pod containing one Seed.

Theſe Trees grow naturally in *America*; the 1ſt Sort is very common in moſt Parts of *North America*, where it is known by the Title of Honey Locuſt; this has been many Years cultivated in the *Engliſh* Gardens, and is known among the Gardeners by the Title of three thorned *Acacia*. This Tree riſes with an erect Trunk, to the Height of 30 or 40 Feet, and is armed with long Spines, which have two or three ſmaller coming out from the Side; theſe are frequently produced in Cluſters at the Knots, and are ſometimes 3 or 4 Inches long. The Branches are armed with the ſame Sort of Spines, and are garniſhed with winged Leaves compoſed of 10 Pair of ſmall Leaves, which ſit cloſe to the Mid-rib, and are of a lucid green. The Flowers come out from the Side of the young Branches in Katkins; they are of an herbaceous Colour, ſo make no Figure. The hermaphrodite Flowers are ſucceeded by Pods near a Foot and a Half long, and 2 Inches broad, divided into many Cells by tranſverſe Partitions, each containing one ſmooth, hard, oblong Seed, ſurrounded by a ſweet Pulp.

The Leaves of this Tree ſeldom come out till *June*, in this Country, and the Flowers appear the latter End of *July*, but they do not flower till they are of a large Size; there was one Tree in the *Chelſea* Garden which produced Flowers ſeveral Years, and there is one now growing in the Biſhop of *London*'s Garden at *Fulham*, which produced Pods in the Year 1728, and came to their full Size, but the Seeds did not ripen.

The ſecond Sort hath much the Appearance of the firſt, but it hath fewer and longer Spines. The Leaves are ſmaller, and the Pods are oval, containing but one Seed; this was diſcovered by the late Mr. *Cateſby*, in *Carolina*, from whence he ſent the Seeds to *England*, by the Title of Water *Acacia*, by which it is known in the Gardens.

Theſe Trees are propagated by Seeds, which muſt be procured from *America*, where they grow naturally; thoſe of the 1ſt Sort are annually ſent to *England* by the Title of Locuſt, or Honey Locuſt, to diſtinguiſh it from the falſe *Acacia*, which is frequently called Locuſt Tree in *America*; theſe Seeds may be ſown on a Bed of light Earth in Spring, burying them Half an Inch deep, and if the Spring prove dry, they muſt be frequently watered, otherwiſe the Plants will not come up the 1ſt Year, for I have ſometimes had the Seeds remain 2 Years in the Ground before they have come up; therefore thoſe who are deſirous to ſave Time, ſhould ſow them as ſoon as they arrive, and plunge the Pots into a moderate hot Bed, obſerving to water them frequently; by this Method moſt of the Plants will come up the ſame Seaſon, but theſe ſhould be gradually inured to bear the open Air, for if they are continued in the hot Bed, they will draw up weak; during the Summer Seaſon, thoſe Plants in Pots will require frequent Waterings, but thoſe in the full Ground will not dry ſo faſt, therefore need no Water, unleſs the Seaſon ſhould prove very dry. In Autumn, thoſe in the Pots ſhould be placed under a hot Bed Frame to protect them from Froſt, for theſe young Plants generally keep growing late in the Summer, ſo the upper Part of their Shoots is tender, and the early Froſts of the Autumn often kill the Ends of them, if not protected, and this frequently occaſions great Part of the Shoots decaying in Winter, for which Reaſon thoſe Plants in the full Ground ſhould be covered with Mats in Autumn, on the firſt Appearance of Froſt, for a ſmall Froſt in Autumn will do more Miſchief to theſe young Shoots which are full of Sap, than ſevere Froſt when the Shoots are hardened.

The following Spring the Plants may be tranſplanted into Nurſery Beds, at a Foot Diſtance Row from Row, and ſix Inches aſunder in the Rows, but this ſhould not be performed 'till *April*, after the Danger of hard Froſt is over; for as they do not put out their Leaves, till very late, ſo there will be no Hazard in removing them any Time before *May*. If the Seaſon ſhould prove dry, they muſt be watered, and if the Surface of the Beds is covered with Moſs, or Mulch, to prevent the Earth from drying, it will be of great Service to them. In theſe Beds the Plants may remain two Years, during which Time they muſt be conſtantly kept clean from Weeds, and in Winter there ſhould be ſome rotten Tan, or other Mulch, ſpread over the Ground to keep out the Froſt. If the Plants thrive well, they will be fit to tranſplant to the Places where they are to remain, after two Years Growth; for they do not bear removing when large, the beſt Seaſon for tranſplanting of theſe Trees, is late in the Spring; they thrive beſt in a light deep Soil, for in ſtrong ſhallow Ground they become moſſy, and never grow large; they ſhould alſo have a ſheltered Situation, for when much expoſed to Winds, their Branches are frequently broken in the Summer Seaſon, when they are fully clothed with Leaves.

GLOBULARIA. *Lin. Gen. Pl.* 106. *Tourn. Inſt. R. H.* 466. *Tab.* 265. Blue Daiſy.

The *Characters* are,

It hath a Flower compoſed of many Florets, which are included in one common ſcaly Empalement; each Floret has an Empalement of one Leaf, which is tubulous, and cut into 5 *Parts at the Top. The Florets have one Petal, whoſe Baſe is tubulous, but the Brim is cut into* 4 *Parts, the upper Segment, which is the leaſt, is reflexed; they have* 4 *Stamina the Length of the Petal, terminated by diſtinct Summits; in the Bottom of the Tube is ſituated an oval Germen, ſupporting a ſingle Style, crowned by an obtuſe Stigma. The Germen afterward becomes an oval Seed, ſitting in the common Empalement.*

The *Species* are,

1. GLOBULARIA *caule herbaceo, foliis radicalibus tridentatis, caulinis lanceolatis. Flor. Suec.* 109. *Globularia* with an herbaceous Stalk, the lower Leaves divided into three Points, and thoſe on the Stalks Spear-ſhaped. *Globularia vulgaris. Tourn.* 467. Common *Globularia*.

2. GLOBULARIA *caule nudo, foliis integerrimis lanceolatis. Lin. Sp. Pl.* 97. *Globularia* with a naked Stalk, and Spear-ſhaped entire Leaves. *Globularia Pyrenaica, folio oblongo, caule nudo. Tourn.* 467. *Pyrenean Globularia*, with an oblong Leaf, and naked Stalk.

3. GLOBULARIA *caule fruticoſo, foliis lanceolatis tridentatis integriſque. Prod. Leyd.* 190. *Globularia* with a ſhrubby Stalk, Spear-ſhaped Leaves ending in three Points, and entire. *Globularia fruticoſa, myrti folio tridentato. Tourn.* 467. Shrubby *Globularia* with a trifid Myrtle Leaf.

4. GLOBULARIA *foliis radicalibus crenato aculeatis, caulinis integerrimis mucronatis. Lin. Sp. Pl.* 96. *Globularia* with lower Leaves crenated and prickly, thoſe on the Stalks entire, and ending in a Point. *Globularia ſpinoſa. Tourn.* 467. Prickly *Globularia*.

5. Globularia *caule ſubnudo, foliis cuneiformibus tricuſpidatis, intermedio minimo. Lin. Sp. Pl. 96.* Globularia with a naked Stalk, and Wedge-ſhaped Leaves, ending in three Points, whoſe middle Segment is the leaſt. *Globularia Alpina minima, origani folio. Tourn.* 467. Smalleſt *Alpine Globularia* with a wild Marjoram Leaf.

6. Globularia *caule ſubnudo, capitulis alternis ſeſſilibus, foliis lanceolato-ovatis integris. Lin. Sp. Pl. 97.* Globularia with a naked Stalk, alternate Heads ſitting cloſe to the Stalks, and oval Spear-ſhaped entire Leaves. *Globularia Orientalis, floribus per caulem ſparſis. Tourn. Cor.* 35. Eaſtern *Globularia* with Flowers ſcattered along the Stalks.

The 1ſt of theſe Plants grows plentifully about *Montpelier*, as alſo at the Foot of the Mountains *Jura* and *Saleva*, and in many other Parts of *Italy*, and in *Germany*; this Plant hath Leaves very like the Daiſy, but thicker and ſmoother. The Flowers grow on Foot Stalks about ſix Inches high, and are of a globular Form, being compoſed of ſeveral Florets, included in one common ſcaly Empalement, they are of a fine blue Colour, and appear in *June*; theſe are ſucceeded by Seeds, which ſit in the Empalement, and ripen in Autumn.

The 2d Sort grows plentifully in the Woods, near the Convent of the *Carthuſians*, and on the *Pyrenean* Mountains; this is much larger than the former, and the Foot Stalk is quite naked. The Leaves are narrower, and much longer.

The 1ſt and 2d Sorts may be propagated by parting their Roots, after the Manner of Daiſies. The beſt Seaſon for parting and tranſplanting them is in *September*, that they may take new Root before the froſty Weather comes on. They ſhould be planted in a ſhady Situation, and loamy Soil, in which they will thrive much better than in light Ground, and an open Situation; but the Plants ſhould not be removed oftener than every other Year, if they are required to flower ſtrong.

The 3d Sort grows about *Montpelier*, in *France*; and in *Valentia*, and ſeveral other Parts of *Spain*. This has a hard woody Stem, which riſes about 2 Feet high, having many woody Branches, beſet with Leaves like thoſe of the Myrtle Tree. On the Top of the Branches the Flowers are produced, which are of a blue Colour, and Globe-ſhaped; this Plant may be propagated by Cuttings, which ſhould be cut off in *April*, juſt before they begin to make new Shoots; they ſhould be planted into Pots filled with light freſh Earth, and placed into a very moderate hot Bed, obſerving to water and ſhade them until they have taken Root, when they may be taken out of the Bed, and inured to bear the open Air by Degrees. In Summer theſe Plants may be expoſed with other hardy exoticks, and in Winter they ſhould be placed under a hot Bed Frame, where they may enjoy the free Air in mild Weather, but ſhould be ſcreened from hard Froſt, which will deſtroy them; but in mild Winters they will live in the open Air. This Plant never produces good Seeds in this Country.

The 4th Sort was found in the Mountains of *Granada*, by Dr. *Albinus*; this Plant is of low Growth, and may be propagated as the firſt; as may alſo the fifth Sort, which is the leaſt of all the Sorts, and the moſt hardy, therefore ſhould have a ſhady Situation, and a cool moiſt Soil.

The 6th Sort was found by Dr. *Tournefort*, in the *Levant*; this is ſomewhat tender, and ſhould be ſheltered from the Froſt in Winter, under a Frame, but in Summer ſhould be expoſed with other hardy exoticks, and will require to be frequently watered in dry Weather. This may be propagated by Seeds, or by parting the Roots, as was directed for the former Sorts.

GLORIOSA. *Lin. Gen. Pl.* 374. *Methonica. Tourn. Acad. R. Scien.* 1706. The Superb Lily.

The *Characters* are,

The Flower hath no Empalement; it hath 6 long Spear-ſhaped Petals, which are waved, and reflexed to the Bottom. It hath 6 Stamina, which ſpread open each Way, and are terminated by proſtrate Summits. In the Center is ſituated a globular Germen, ſupporting a ſlender inclining Style, crowned by an obtuſe triple Stigma. The Germen afterward becomes an oval thin Capſule having 3 Cells, filled with globular Seeds diſpoſed in a double Range.

The *Species* are,

1. Gloriosa *foliis longioribus capreolis terminalibus.* Superb Lily with longer Leaves ending with Claſpers. *Methonica Malabarorum. Hort. Lugd.* 688. *Methonica* of *Malabar*, and the *Lilium Zeylanicum ſuperbum. Hort. Amſt.* 1. p. 69. Superb Lily of *Ceylon*.

2. Gloriosa *foliis ovato-lanceolatis acutis.* Superb Lily with oval, Spear-ſhaped, acute Leaves.

The 1ſt Sort grows naturally on the Coaſt of *Malabar*, and alſo in *Ceylon*, from whence it was firſt brought to the Gardens in *Holland*, where it has been many Years cultivated; it hath an oblong fleſhy Root of a whitiſh Colour, and of a nauſeous bitter Taſte, from the Middle of which ariſes a round weak Stalk, which requires Support to prevent its trailing on the Ground. The Stalks grow to the Height of 8 or 10 Feet, and are garniſhed with Leaves placed alternate on every Side; theſe are ſmooth, about 8 Inches long, and one and a Half broad at the Baſe, growing narrower 'till within 2 Inches of the End, which runs out in a narrow Point, ending with a Tendril, or Claſper, by which it faſtens to the neighbouring Plants for Support. At the upper Part of the Stalk the Flower is produced, ſtanding on a ſlender Foot Stalk; it is compoſed of ſix oblong Petals, ending with acute Points, which, on their firſt opening, are of an herbaceous Colour, and ſpread wide open; the Flower hanging downward as the Crown Imperial and Fritillary, but afterwards the Petals turn quite back, and change to a very beautiful red Flame Colour, their acute Points meeting at the Top; theſe Petals are finely waved on their Edges. The ſix Stamina ſpread out every Way almoſt horizontal, and are terminated by proſtrate Summits. In the Center of the Flower is ſituated a roundiſh Germen, ſupporting an inclining Style, crowned by a triple Stigma. This Plant flowers in *June* and *July*, but does not perfect Seeds in this Country. The Stalks decay in Autumn, and the Roots remain inactive all the Winter, and the new Stalks come out in *March*. The Roots and every Part of this Plant is very poiſonous, ſo ſhould not be put in the Way of Children.

The Seeds of the ſecond Sort were ſent me by Monſ. *Richard*, Gardener to the *French* King, at *Trianon*;

heſe were brought from *Senegal*, by Monſ. *Adanſon*, who diſcovered this Plant growing there naturally; this is ſaid to have a blue Flower, but the Plants which are in the *Chelſea* Garden are too young to flower. This hath a climbing Stalk, garniſhed with ſmooth Leaves, about 2 Inches long, and 2 broad, ending in acute Points, but have no Tendril, or Claſper. The Stalks as yet have not grown more than a Foot high here, but have the Appearance of climbing like the other Sort. The Leaves have a ſtrong diſagreeable Scent on being handled, ſo as to be troubleſome to the Head if too near, or long ſmelt to.

As theſe Plants do not produce Seeds in this Country, ſo they are only propagated by their Roots; thoſe of the 1ſt Sort creep and multiply pretty faſt, but the 2d hath not as yet put out any Offsets; but as the Plants are young, we cannot as yet ſay how they may encreaſe when of a proper Age. Theſe Roots may be taken out of the Ground when their Stalks are decayed, and preſerved in Sand during the Winter Seaſon, but they muſt be kept in the Stove, or a warm Room, where they can receive no Injury from the Cold, and in Spring they muſt be planted in Pots filled with light Earth, and plunged into the Tan Bed in the Stove; but others chooſe to let the Roots continue in the Ground all Winter, keeping the Pots always in the Tan Bed; where this is practiſed, the Roots ſhould have very little Water in Winter, for as they are then in an inactive State, Moiſture at that Time frequently rots the Roots.

Toward the latter End of *March*, or Beginning of *April*, their Stalks will appear, when there ſhould be ſome tall Sticks put down by them to ſupport them, otherwiſe they will trail over the neighbouring Plants, and the firſt Sort will faſten to the Plants by the Tendrils, which are at the Ends of the Leaves. The Stalks of this Sort will riſe 10 or 12 Feet high, if the Roots are ſtrong, and ſome of the Stalks will produce 2 or 3 Flowers, which come out from the Wings of the Stalk near the Top; theſe Flowers make a fine Appearance in the Stove, during their Continuance, which is ſeldom more than 10 Days, or a Fortnight. In Summer, when the Plants are growing, they will require frequently to be watered, but they muſt not have it in too large Quantities, for they are very ſubject to rot with much Wet. Thoſe Roots which are not taken out of the Pots in Winter, ſhould be tranſplanted and parted the Beginning of *March*, before they put out new Fibres, or Stalks, for they muſt not be removed when in a growing State; the Pots in which theſe Roots are planted, ſhould not be too large, for unleſs they are confined, they will not put out ſtrong Stalks; the largeſt Roots may be planted in Twopenny Pots, but the ſmall ones will require only Pots of about 5 or 6 Inches over at the Top.

GLYCINE. *Lin. Gen. Pl.* 797. *Apios. Boer. Ind. Alt.* Knobbed-rooted Liquorice Vetch.

The *Characters* are,

The Empalement of the Flower is of 1 *Leaf, divided into* 2 *Lips at the Top, the upper Lip being obtuſe and indented; the lower Lip is longer, trifid, and acute, the middle Indenture being extended beyond the other. The Flower is of the Butterfly Kind. The Standard is Heart-ſhaped, deflexed on the Sides, gibbous on the Back, and indented at the Point. The Wings are ſmall, oblong, and oval toward their End, and bend backward. The Keel is narrow, Sickle-ſhaped, turning upward with its Point to the Standard, where it is broadeſt. It hath* 10 *Stamina,* 9 *of which are joined in one Body, and the other ſtands ſingle, terminated by ſingle Summits. In the Center is ſituated an oblong Germen ſupporting a ſpiral cylindrical Style, crowned by an obtuſe Stigma. The Germen afterward becomes an oblong Pod with two Cells, incloſing Kidney-ſhaped Seeds.*

The *Species* are,

1. GLYCINE *foliis pinnatis ovato-lanceolatis. Hort. Upſal.* 227. Glycine with oval Spear-ſhaped winged Leaves. *Aſtragalus tuberoſus ſcandens, Fraxini folio. Tourn. Inſt.* 415. Climbing tuberous Milk Vetch with an Aſh Leaf, and the *Apios Americana. Cornut.* 200.

2. GLYCINE *foliis pinnatis caule perenni. Hort. Cliff.* 361. *Glycine* with winged Leaves and a perennial Stalk. *Phaſeoloides fruteſcens, Caroliniana, foliis pinnatis, floribus cæruleis conglomeratis. Hort. Angl. Tab.* 15. *Carolina* Kidney Bean Tree, with winged Leaves, and blue Flowers growing in Whorls.

3. GLYCINE *foliis pinnatis conjugatis, pinnis ovatis oblongis obtuſis. Flor. Zeyl.* 284. *Glycine* with winged Leaves placed by Pairs, and the Lobes oval, oblong, and obtuſe. This is the *Orobus Americanus, fructu coccineo nigrâ maculâ notato. Tourn. Inſt.* 393. *American* Bitter Vetch with a ſcarlet Fruit, marked with a black Spot, commonly called wild Liquorice in the *Weſt-Indies.*

4. GLYCINE *foliis ternatis hirſutis, racemis lateralibus. Lin. Sp. Pl.* 754. *Glycine* with hairy trifoliate Leaves, and Flowers growing in long Bunches from the Sides of the Stalks. *Phaſeolus Marianus ſcandens, floribus comoſis. Pet. Muſ.* 453. Climbing Kidney Bean of *Maryland*, with ſpiked Flowers.

5. GLYCINE *foliis ternatis tomentoſis, racemis axillaribus breviſſimis, leguminibus diſpermis. Lin. Sp. Pl.* 754. *Glycine* with woolly trifoliate Leaves, very ſhort Spikes of Flowers proceeding from the Sides of the Stalks, with Pods containing two Seeds. *Anonis phaſeoloides ſcandens, floribus flavis ſeſſilibus. Hort. Elth.* 30. *Tab.* 26. Climbing Reſt Harrow like Kidney Bean, with yellow Flowers ſitting cloſe to the Stalks.

The 1ſt Sort grows naturally in *Virginia*; this hath Roots compoſed of ſeveral Knobs, or Tubers, which hang to each other by ſmall Strings; from theſe come out in the Spring ſlender twining Stalks, which riſe to the Height of 8 or 10 Feet, garniſhed with winged Leaves, compoſed of 3 Pair of oval Spear-ſhaped Lobes, terminated by an odd one. The Flowers come out in ſhort Spikes from the Side of the Stalks; they are of a Pea Bloſſom Kind, of a dirty Fleſh Colour, having little Scent. This appears in *Auguſt*, but does not produce Seeds in *England*. The Stalks decay in Autumn, but the Roots continue; this is propagated by parting the Roots, each of the Tubers being ſeparated from the principal Root, will grow; the beſt Time for this is about the End of *March*, or Beginning of *April*, before they put out Shoots. The Roots ſhould be planted in a warm Situation, and covered in hard Froſt, otherwiſe they will not live abroad in this Country; where they have been planted againſt a South Wall, they have thriven and flowered extremely well, which they ſeldom do in any other Situation; and thoſe Roots which are planted in Pots rarely flower, nor do their Stalks riſe near ſo high as thoſe planted in the full Ground ; ſome ignorant Perſons call this the *Twickenham* Climber.

The 2d Sort was brought from *Carolina*, but has been ſince obſerved in *Virginia*, and ſome other Places in *North America* ; this Sort has woody Stalks, which twiſt themſelves together, and twine round any Trees that grow near, and will riſe to the Height of 15 Feet, or more. The Leaves are winged, and in Shape ſomewhat like the Aſh Tree, but have a greater Number of *Pinnæ*. The Flowers are produced from the Wings of the Leaves, which are of a purple Colour ; theſe are ſucceeded by long cylindrical Pods, ſhaped like thoſe of the ſcarlet Kidney Bean, containing ſeveral Kidney-ſhaped Seeds, but theſe are never perfected in *England*.

This climbing Shrub is propagated in ſeveral Nurſeries near *London*, where it is known by the Name of *Carolina* Kidney Bean Tree. It is increaſed by laying down the young Branches in *October*, which will be rooted well by that Time Twelvemonth (eſpecially if they are duly watered in dry Weather), and may then be tranſplanted either in a Nurſery for a Year to get Strength, or to the Place where they are to remain for good, which ſhould be in a warm light Soil, and a ſheltered Situation, where they will endure the Cold of our ordinary Winters very well; and if their Roots are covered with Straw, Fern, Peas Haulm, or any other light Covering, there will be no Danger of their being deſtroyed by the Froſt.

The 3d Sort grows naturally in both *Indies*, and alſo in *Egypt*. This is a perennial Plant, with ſlender twining Stalks, which twiſt round any neighbouring Support, and riſe to the Height of 8 or 10 Feet, and are garniſhed with winged Leaves, compoſed of 16 Pair of oblong blunt Lobes, ſet cloſe together ; theſe have the Taſte of Liquorice, from whence the Inhabitants of the *Weſt-Indies* have given it the Name of Wild Liquorice, and uſe the Herb for the ſame Purpoſe as Liquorice in *Europe*. The Flowers are produced from the Side of the Stalks in ſhort Spikes or Bunches ; they are of a pale purple Colour, and ſhaped like thoſe of the Kidney Bean ; they are ſucceeded by ſhort Pods, each containing 3 or 4 hard round Seeds of a ſcarlet Colour, with a black Spot or Eye on that Side which is faſtened to the Pod. The Seeds of this Plant are frequently ſtrung, and worn as Ornaments by the Natives of thoſe Countries, where they grow naturally ; they are frequently brought to *England* from the *Weſt-Indies*, and wrought into various Forms, with Shells and other hard Seeds.

This Plant is propagated by Seeds, which muſt be ſown on a good hot Bed in the Spring ; but as the Seeds are very hard, unleſs they are ſoaked in Water 12 or 14 Hours before they are ſown, they frequently lie in the Ground a whole Year before they vegetate ; but when ſoaked, the Plants will appear in a Fortnight, if they are good, and the Bed in a proper Temperature of Heat. When the Plants are 2 Inches high, they ſhould be each tranſplanted into a ſeparate Pot, filled with light Earth, and plunged into a hot Bed of Tanners Bark, where they ſhould be ſhaded from the Sun till they have taken new Root ; after which they muſt be treated as other tender Plants from the ſame Countries, always keeping them in the Bark Stove, for they are too tender to thrive in any other Situation in *England*. This Sort will flower the 2d Year from Seeds, and ſometimes ripens Seeds here.

There are 2 other Varieties of this Plant, one with a white, and the other a yellow Seed, but the Plants do not differ from the other in Leaf or Stalk ; but as theſe have not as yet flowered in *England*, ſo I do not know how their Flowers may differ.

The 4th Sort hath a perennial Root and an annual Stalk, which decays in Autumn. This riſes from 2 to 3 Feet high, with ſlender herbaceous Stalks, garniſhed with trifoliate hairy Leaves, ſitting cloſe to the Stalks ; the ſmall Leaves or Lobes, are of the oval Spear Shape, ending in acute Points. The Flowers come out from the Side of the Stalks, at the Foot Stalk of the Leaves ; the naked Part of the Foot Stalk is about 2 Inches long, and the Spike of Flowers about the ſame Length, and recurved ; the Flowers are of the Pea Bloſſom Kind, ſitting cloſe together. They are ſmall, and of a fine blue Colour, coming out the Beginning of *June*, and are ſometimes ſucceeded by Seeds in *England*, which ripen in *Auguſt*.

This Sort grows naturally in *North America*, and is hardy enough to live in the open Air in *England*. It may be propagated by Seeds, or parting the Roots ; the former is the beſt Method, where good Seeds can be obtained : Theſe may be ſown on a Bed of light Earth in Spring, and if the Seaſon prove dry, muſt be frequently refreſhed with Water, otherwiſe they will remain a long Time in the Ground before they vegetate ; when the Plants come up, they muſt be kept clean from Weeds in Summer, and in Autumn when their Stalks are decayed, if ſome rotten Tanners Bark is ſpread over the Surface of the Ground, it will protect the Roots from being injured by the Froſt. In the Spring, the Roots ſhould be tranſplanted to the Places where they are to remain, which muſt be in a warm ſheltered Situation, but not too much expoſed to the Sun, and a light Soil, where they will thrive and produce Flowers annually. If this is propagated by parting the Roots, it ſhould be done in Spring, before the Roots begin to ſhoot, which is the beſt Seaſon for tranſplanting them : But theſe Roots ſhould not be parted oftener than every 3d Year, for if they are often removed, they will not flower ſo ſtrong.

The 5th Sort hath a perennial Root, and an annual climbing Stalk, which riſes near 4 Feet high, garniſhed with woolly trifoliate Leaves : The Flowers come out in ſhort Bunches from the Side of the Stalks, they are ſmall, of a yellow Colour, and are ſucceeded by ſhort Pods, which contain two roundiſh Seeds in each. This flowers in *June*, and the Seeds ripen in Autumn. It grows naturally in *Virginia*, but will live in the open Air in *England*, if planted in a ſheltered Situation. This is propagated, and requires the ſame Treatment as the 4th Sort.

GLYCYRRHIZA. *Lin. Gen. Pl.* 788. *Tourn. Inſt. R. H.* 389. *Tab.* 210. Liquorice ; in *French*, *Regliſſe*.

The *Characters* are,

The Flower hath a permanent Empalement of 1 *Leaf, which is tubulous, and divided into* 2 *Lips ; the upper Lip is cut into* 3 *Parts, the middle one being broad and bifid, the under Lip ſingle. The Flower hath* 4 *Petals, is of the Butterfly Kind, having a long erect Standard, with oblong Wings, and a* 2 *leaved Keel which is acute. It hath* 10 *Stamina,* 9 *joined and* 1 *ſtanding ſingle ; they are erect above the Keel, and terminated by roundiſh Summits. In the Bottom is ſituated a ſhort Germen, ſupporting an Awl-ſhaped*

ſhaped Style the Length of the Stamina, crowned by a riſing obtuſe Stigma. The Germen afterward becomes an oblong, or oval compreſſed Pod with one Cell, including 2 *or* 3 *Kidney-ſhaped Seeds.*

The *Species* are,

1. GLYCYRRHIZA *leguminibus glabris. Hort. Cliff.* 490. Liquorice with ſmooth Pods. *Glycyrrhiza ſiliquoſa, vel Germanica. C. B. P.* Common Liquorice.

2. GLYCYRRHIZA *leguminibus echinatis. Prod. Leyd.* 386. Liquorice with prickly Pods. *Glycyrrhiza capite echinato. C. B. P.* Rough podded Liquorice.

3. GLYCYRRHIZA *leguminibus hirſutis. Prod. Leyd.* 386. Liquorice with hairy Pods. This is the *Glycyrrhiza Orientalis, ſiliquis hirſutiſſimis. Tourn. Cor.* Eaſtern Liquorice, with hairy Pods.

The 1ſt Sort is that commonly cultivated in *England* for Medicine; the other 2 Kinds are preſerved in curious Botanick Gardens for Variety, but their Roots are not ſo full of Juice as the 1ſt, nor is the Juice ſo ſweet; though the 2d Sort ſeems to be that which *Dioſcorides* has deſcribed and recommended; but I ſuppoſe the Goodneſs of the firſt has occaſioned its being ſo generally cultivated in *Europe.*

The Roots of this run very deep into the Ground, and creep to a conſiderable Diſtance, eſpecially where permitted to ſtand long unremoved; from theſe ariſe ſtrong herbaceous Stalks, 4 or 5 Feet high, and garniſhed with winged Leaves, compoſed of 4 or 5 Pair of oval Lobes, terminated by an odd one, the Leaves and Stalks are clammy, and of a dark green; the Flowers come out in Spikes from the Wings of the Stalks, ſtanding erect; they are of a pale blue Colour, and ſucceeded by ſhort compreſſed Pods, each containing 2 or 3 Kidney-ſhaped Seeds. It flowers the latter End of *July*, but the Seeds do not ripen in *England.*

This Plant delights in a rich light ſandy Soil, which ſhould be 3 Feet deep at leaſt, for the Goodneſs of Liquorice conſiſts in the Length of the Roots: The greateſt Quantity of Liquorice propagated in *England*, is about *Pontefract* in *Yorkſhire*, and *Godalmin* in *Surry*; though of late Years, there hath been a great deal cultivated in the Gardens near *London:* The Ground in which you intend to plant Liquorice, ſhould be well dug and dunged the Year before you plant it, that the Dung may be perfectly rotted, and mixed with the Earth, otherwiſe it will be apt to ſtop the Roots from running down; and before you plant it, the Ground ſhould be dug 3 Spades deep, and laid very light; when your Ground is thus well prepared, you ſhould furniſh yourſelf with freſh Plants taken from the Sides or Heads of the old Roots, obſerving that they have a good Bud or Eye, otherwiſe they are ſubject to miſcarry; theſe Plants ſhould be about 10 Inches long, and perfectly ſound.

The beſt Seaſon for planting them is towards the End of *February*, or Beginning of *March*, which muſt be done in the following Manner, *viz.* Firſt ſtrain a Line croſs the Ground in which you would plant them, then with a long Dibble made on Purpoſe, put in the Shoot, ſo that the whole Plant may be ſet ſtrait into the Ground, with the Head about an Inch under the Surface in a ſtrait Line, about a Foot aſunder, or more, in Rows, and two Feet Diſtance Row from Row; and after having finiſhed the whole Spot of Ground, you may ſow a thin Crop of Onions, which, being Plants that do not root deep into the Ground, nor ſpread much above Ground, will do the Liquorice no Damage the firſt Year; for the Liquorice will not ſhoot very high the firſt Seaſon, and Hoeing the Onions will alſo keep the Ground clear from Weeds; but in doing this you muſt be careful not to cut off the top Shoots of the Liquorice Plants, as they appear above Ground, which would greatly injure them; and alſo obſerve to cut up all the Onions which grow near the Heads of the Liquorice; and after your Onions are pulled up, you ſhould carefully hoe and clean the Ground from Weeds; and in *October*, when the Shoots of the Liquorice are decayed, ſpread a little very rotten Dung on the Surface of the Ground, which will prevent the Weeds from growing during the Winter, and the Rain will waſh the Virtue of the Dung into the Ground, which will greatly improve the Plants.

In the Beginning of *March* following you ſhould ſlightly dig the Ground between the Rows of Liquorice, burying the remaining Part of the Dung; but in doing of this, you ſhould be very careful not to cut the Roots. This ſtirring of the Ground will not only preſerve it clean from Weeds a long Time, but greatly ſtrengthen the Plants.

The Diſtance which I have allowed for planting them, will, I doubt not, by ſome, be thought too great; but in Anſwer to that, I would only obſerve, that as the Largeneſs of the Roots is the chief Advantage to the Planter, ſo the only Method to obtain this, is by giving them Room; and beſides, this will give a greater Liberty to ſtir and dreſs the Ground, which is of great Service to Liquorice; and if the Plantation deſigned were to be of an extraordinary Bigneſs, I would adviſe the Rows to be made at leaſt 3 Feet diſtant, whereby it will be eaſy to ſtir the Ground with a Breaſt Plough, which will greatly leſſen the Expence of Labour.

Theſe Plants ſhould remain 3 Years from the Time of planting, when they will be fit to take up for Uſe; which ſhould not be done until the Stalks are perfectly decayed, for when it is taken up too ſoon, it is ſubject to ſhrink greatly, and loſe of its Weight.

The Ground near *London* being rich, increaſes the Bulk of the Root very faſt; but when it is taken up, it appears of a very dark Colour, and not near ſo ſightly as that which grows on a ſandy Soil in an open Country.

The 2d Sort grows naturally in ſome Parts of *Italy*, and in the *Levant*; the Stalks and Leaves of this are very like thoſe of the firſt, but the Flowers are produced in ſhorter Spikes, and the Pods which ſucceed them are very ſhort, broad at their Baſe, ending in acute Points, and armed with ſharp Prickles. This flowers about the ſame Time as the firſt, and in warm Seaſons will perfect Seeds in *England.*

The 3d Sort grows naturally in the *Levant*, from whence the Seeds were ſent to the Royal Garden at *Paris*, by Dr. *Tournefort.* This hath much the Appearance of the other two Species, but the Pods of it are hairy, and longer than thoſe of the other. Both theſe Sorts may be propagated in the ſame Manner as the firſt, or from Seeds, which may be ſown in the Spring on a Bed of light Earth; but as neither of theſe are uſed, ſo they are ſeldom propagated unleſs for Variety.

GNAPHALIUM. *Lin. Gen. Pl.* 850. *Elichryſum.*

Tourn. Inſt. R. H. 452. *Tab.* 259. Goldylocks, or Eternal Flower; in *French*, *Immortelle.*

The *Characters* are,

It hath a compound Flower, made up of hermaphrodite Florets and female half Florets, included in 1 *ſcaly Empalement; the hermaphrodite Florets are tubulous, Funnel-ſhaped, and cut into* 5 *Parts at the Brim, which are reflexed; theſe have* 5 *ſhort hairy Stamina, terminated by cylindrical Summits. In the Center is ſituated a crowned Germen, ſupporting a ſlender Style the Length of the Stamina, crowned by a bifid Stigma; the Germen afterward becomes a ſingle Seed, which in ſome Species is crowned with a hairy Down, and in others a feathery Down. The female Flowers which are intermixed with theſe have no Stamina, but a crowned Germen ſupporting a ſlender Style, crowned by a bifid reflexed Stigma. Theſe are in ſome Species fruitful, and in others barren. The Empalement of the Flower is permanent and ſhining.*

The *Species* are,

1. GNAPHALIUM *tomentoſum, foliis caulinis linearibus, caule fruticoſo, corymbo compoſito.* Woolly Goldylocks with a ſhrubby Stalk garniſhed with very narrow Leaves, and a compound Corymbus of Flowers. *Elichryſum ſeu ſtæchas citrina anguſtifolia. C. B. P.* 264. Caſſidony, or narrow-leaved Goldylocks.

2. GNAPHALIUM *foliis linearibus, caule fruticoſo ramoſo, corymbo compoſito. Hort. Cliff.* 401. Goldylocks with a branching ſhrubby Stalk, having very narrow Leaves, and a compound Corymbus of Flowers. *Elichryſum anguſtiſſimo folio. Tourn. Inſt. R. H.* 452. Goldylocks with very narrow Leaves.

3. GNAPHALIUM *foliis alternis, acutè dentatis, ſubtus villoſis, pedunculis longiſſimis unifloris.* Goldylocks with alternate Leaves ſharply indented, woolly on their under Side, with very long Foot Stalks ſuſtaining one Flower. *Elichryſum ſylveſtre latifolium, flore parvo ſingulari. Tourn. Inſt. R. H.* 452 Broad leaved wild Goldylocks, with a ſingle ſmall Flower.

4. GNAPHALIUM *foliis ſemiamplexicaulibus enſiformibus, repandis obtuſis, utrinque pubeſcentibus, floribus conglomeratis. Prod. Leyd.* 149. Goldylocks with Sword-ſhaped Leaves half embracing the Stalks, obtuſe, reflexed, and woolly on both Sides, and Flowers growing in Cluſters. *Elichryſum ſylveſtre latifolium capitulis conglobatis. C. B. P.* 264. Broad leaved wild Goldylocks, with Heads growing in Cluſters.

5. GNAPHALIUM *caule ramoſo diffuſo, floribus confertis terminalibus. Flor. Lapp.* 300. Goldylocks with a diffuſed branching Stalk, and Flowers in Cluſters at the Top. *Elichryſum aquaticum, ramoſum, minus, capitulis foliaceis. Tourn. Inſt.* 452. Leſſer branching aquatick Goldylocks with leafy Heads.

6. GNAPHALIUM *caule ſimpliciſſimo, floribus ſparſis. Flor. Lapp.* 298. Goldylocks with a ſingle Stalk, and Flowers growing ſparſedly. This is the *Elichryſum ſpicatum. Tourn. Inſt. R. H.* 453. Spiked Goldylocks.

7. GNAPHALIUM *caule ſimpliciſſimo corymbo ſimplici terminali, ſarmentis procumbentibus. Hort. Cliff.* 400. Goldylocks with a ſingle Stalk terminated by a ſingle Corymbus, and trailing Branches. *Elichryſum montanum flore rotundiori candido. Tourn. Inſt. R. H.* 453. Mountain Goldylocks with a rounder white Flower.

8. GNAPHALIUM *foliis radicalibus, cuneiformibus, caulinis acutis ſeſſilibus, caule ſimpliciſſimo, capitulo terminali aphyllo, floribus oblongis.* Goldylocks with the lower Leaves Wedge-ſhaped, thoſe on the Stalks acute, and ſitting cloſe, a ſingle Stalk without Leaves, terminated by oblong Flowers. *Elichryſum montanum longiore & folio & flore albo. Tourn. Inſt.* 453. Mountain Goldylocks, with a longer Leaf and white Flower.

9. GNAPHALIUM *humile, caule ſuffruticoſo, foliis linearibus ſubtus argenteis, ſquamis calycinis longioribus acuminatis:* Low Goldylocks with a ſhrubby Stalk, very narrow Leaves, ſilvery on their under Side, and longer acute pointed Scales to the Empalement. *Chamæchryſocoma prælongis purpuraſcentibuſque Jaceæ capitulis. Barrel. Icon.* 406. Dwarf Goldylocks with longer and purpliſh Heads like Napweed.

10. GNAPHALIUM *foliis confertis anguſto-lanceolatis, caule fruticoſo, corymbo compoſito. Hort. Cliff.* 402. Goldylocks with narrow Spear-ſhaped Leaves growing in Cluſters, a ſhrubby Stalk, and compound Corymbus. *Elichryſum Orientale. C. B. P.* 264. Eaſtern Goldylocks called Immortal Flower.

11. GNAPHALIUM *foliis lineari-lanceolatis obtuſis, utrinque tomentoſis, caule ramoſo, corymbo compoſito terminali.* Goldylocks with narrow Spear-ſhaped obtuſe Leaves, woolly on both Sides, and a branching Stalk terminated by a compound Corymbus of Flowers. *Elichryſum Germanicum, calyce ex aureo rutilante. Tourn. Inſt. R. H.* 452. *German* Goldylocks having a reddiſh Gold coloured Empalement.

12. GNAPHALIUM *foliis lineari-lanceolatis acuminatis, alternis, caule ſupernè ramoſo, corymbis faſtigiatis. Hort. Cliff.* 401. Goldylocks with narrow Spear-ſhaped pointed Leaves placed alternate, the upper Part of the Stalk branching, with a compact Corymbus of Flowers. *Elichryſum Americanum latifolium. Tourn. Inſt. R. H.* 453. Broad leaved *American* Goldylocks.

13. GNAPHALIUM *foliis amplexicaulibus, ovatis, nervoſis, utrinque lanuginoſis. Lin. Sp. Pl.* 850. Goldylocks with oval nervous Leaves embracing the Stalks, downy on both Sides. *Elichryſum Africanum fœtidiſſimum, ampliſſimo folio. Tourn. Inſt. R. H.* 454. Moſt ſtinking *African* Goldylocks with a large Leaf.

14. GNAPHALIUM *foliis amplexicaulibus integerrimis acutis, ſubtus tomentoſis, caule ramoſo. Hort. Cliff.* 402. Goldylocks with entire acute Leaves embracing the Stalks, woolly on their under Side, and a branching Stalk. *Elichryſum Africanum fœtidiſſimum ampliſſimo folio calice argenteo. Tourn. Inſt.* 454. Moſt ſtinking *African* Goldylocks, with a very large Leaf, and ſilvery Empalement to the Flower.

15. GNAPHALIUM *foliis decurrentibus acutis, undatis, ſubtus tomentoſis, caule ramoſo. Hort. Cliff.* 402. Goldylocks with acute running Leaves which are waved, woolly on their under Side, and a branching Stalk. *Elichryſum graveolens acutifolium, caule alato. Hort. Elth.* 130. Stinking Goldylocks, with an acute Leaf and winged Stalk.

16. GNAPHALIUM *foliis lanceolatis ſemiamplexicaulibus, caule infernè ramoſo terminali. Hort. Cliff.* 401. Goldylocks with Spear-ſhaped Leaves embracing the Stalks, and the under Branches terminated with Flowers. *Elichryſum Africanum folio oblongo, ſubtus incano, ſuprà*

viridi, flore luteo. Boerh. Ind. alt. 1. 121. *African* Goldylocks with an oblong Leaf, hoary on the under Side, and green above, with a yellow Flower.

17. GNAPHALIUM *caule herbaceo ſimpliciſſimo, foliis lanceolatis obtuſis tomentoſis, floribus ſpicatis lateralibuſque.* Goldylocks with a ſingle herbaceous Stalk, obtuſe Spear-ſhaped woolly Leaves, and Flowers growing in Spikes from the Sides of the Stalks. *Gnaphalium ad ſtæchadem citrinam accedens. Sloan. Cat. Jam.* 125. Cudweed like golden Caſſidony.

18. GNAPHALIUM *foliis lineari-lanceolatis, caule infernè ramoſo, corymbo compoſito terminali. Hort. Cliff.* 401. Goldylocks with narrow Spear-ſhaped Leaves, the under Part of the Stalk branching, and a compound Corymbus terminating the Branches. *Elichryſum Africanum, folio oblongo anguſto, flore rubello poſtea aureo. Boerh. Ind. alt.* 121. *African* Goldylocks with an oblong narrow Leaf and a reddiſh Flower, which is afterwards yellow.

19. GNAPHALIUM *foliis linearibus tomentoſis, integerrimis ſeſſilibus, corymbis alternis conglobatis, floribus globoſis. Prod. Leyd.* 149. Goldylocks with narrow woolly entire Leaves ſitting cloſe to the Stalks, and globular Flowers joined cloſe in Heads placed alternate. *Elichryſum flore ſuave rubente. Boerh. Ind. alt.* 1. 120. Goldylocks with a ſweetly red Flower.

20. GNAPHALIUM *fruticoſum, foliis infernè lanceolatis caulinis lineari-lanceolatis, utrinque tomentoſis, corymbo compoſito terminali.* Shrubby Goldylocks with the under Leaves Spear-ſhaped, thoſe on the Stalks narrow, Spear-ſhaped, and woolly on both Sides, and the Stalks terminated by a Corymbus of Flowers. *Elichryſum Africanum fruteſcens, anguſtis & longioribus foliis incanis. Hort. Amſt.* 2. p. 109. Shrubby *African* Goldylocks with longer and narrower Leaves, which are hoary.

21. GNAPHALIUM *foliis decurrentibus obtuſis infernè villoſis, corymbis conglobatis terminalibus.* Goldylocks with obtuſe running Leaves, hoary on their under Side, and a cluſtered Corymbus of Flowers terminating the Stalk. *Elichryſum foliis linearibus decurrentibus, ſubtus incanis, floribus corymboſis. Fig. Plant. Tab.* 131. *fol.* 2. Goldylocks with narrow running Leaves, hoary on their under Side, and Flowers growing in a Corymbus.

22. GNAPHALIUM *caule ſimpliciſſimo, foliis radicalibus ovatis maximis, ſarmentis procumbentibus. Lin. Sp. Pl.* 850. Goldylocks with a ſimple Stalk, very large oval Leaves at Bottom, and trailing Runners. *Gnaphalium plantaginis folio, Virginianum. Pluk. Alm.* 171. *Virginia* Goldylocks with a Plaintain Leaf.

23. GNAPHALIUM *foliis lanceolatis, caule tomentoſo ramoſo, floribus terminalibus glomeratis conicis. Lin. Sp. Plant.* 851. Goldylocks with Spear-ſhaped Leaves, a branching woolly Stalk, terminated by a conical Cluſter of Flowers. *Elichryſum obtuſifolium, capitulis argenteis conglobatis. Hort. Elth.* 130. Blunt leaved Goldylocks, with ſilvery Heads growing in Cluſters.

24. GNAPHALIUM *foliis lanceolatis decurrentibus tomentoſis, floribus ſpicatis terminalibus lateralibuſque.* Goldylocks with Spear-ſhaped woolly running Leaves, and Flowers growing in Spikes at the Ends and Sides of the Stalks. *Helichryſum caule alato, floribus ſpicatis, Sloan. Cat. Jam.* 125. Goldylocks with a winged Stalk and ſpiked Flowers.

The 1ſt Sort hath a ſhrubby Stalk, which riſes about 3 Feet high, branching out into long ſlender Stalks irregularly; the lower Branches are garniſhed with obtuſe Leaves, 2 Inches and Half long, and an Eighth of an Inch broad at the Point, but thoſe on the Flower Stalks are very narrow, ending in acute Points; the whole Plant is very woolly, the Flowers terminate the Stalks, in a compound Corymbus; their Empalements are of a ſilvery Colour at firſt, and very neat, but afterward turn of a yellowiſh Sulphur Colour. If theſe are gathered before the Flowers are much opened, the Heads will continue in Beauty many Years, eſpecially if kept from the Air and Duſt. The Plants begin to flower in *June*, and there is a Succeſſion of Flowers all the Summer, ſome of which will continue in Beauty moſt Part of the Winter. This is generally ſuppoſed to be the true golden Caſſidony of the Shop, but the 2d Sort is uſually ſubſtituted for it *England*.

It is propagated by Slips or Cuttings, which may be planted in *June* or *July*, in a Bed of light Earth, and covered with Glaſſes, or ſhaded with Mats, obſerving to refreſh them frequently with Water, but not in large Quantities; theſe Cuttings will put out Roots in a Month or five Weeks, then they ſhould be taken up and planted in Pots filled with light Earth, and placed in a ſhady Situation till they have taken new Root, when they may be removed to an open Situation, and placed among other hardy Exoticks, till about the Middle or End of *October*; at which Time they ſhould be placed under a common Frame, where they may be protected from Froſt, but in mild Weather be expoſed to the open Air. With this Management, in Winter, the Plants will be much ſtronger than thoſe kept in the Green-houſe, where they generally draw too weak; for this Sort only wants to be ſheltered from hard Froſt, being ſo hardy as in very mild Winters to live abroad in warm Borders near Walls, with little Shelter.

The 2d Sort hath a ſhrubby Stalk, which divides into many ſlender Branches, covered with a white Bark; theſe form a thick buſhy under Shrub, and riſe near 3 Feet high, garniſhed with very narrow Leaves, hoary on their under Side, but green on their upper, placed without Order on every Side the Stalks; the Flowers are produced in a compound Corymbus at the End of the Branches; their Heads are ſmall, and of a yellow Colour when fully blown; theſe are continued in Succeſſion moſt Part of Summer. This grows naturally in *France* and *Germany*, and is hardy enough to live in the open Air in *England*. It is propagated by ſlips or Cuttings, which may be planted in a ſhady Border during any of the Summer Months, and in the Autumn tranſplanted where they are deſigned to remain. This ſhould have a dry undunged Soil, in which it is rarely injured by the moſt ſevere Froſt.

The 3d Sort is an annual Plant, which grows naturally in *Italy* and *Sicily*; this hath an herbaceous Stalk, little more than a Foot high, garniſhed with acute indented Leaves, hoary on their under Side; the Flowers ſtand on long Foot Stalks, which riſe far above the Branches, each ſuſtaining one ſmall whitiſh Flower. Theſe appear in *July*, and the Seeds ripen in *September*. It is propagated by Seeds which ſhould be ſown on a Bed of light Earth, where the Plants are deſigned to remain; and when they come up, ſhould be thinned where too cloſe, and kept clean from Weeds, which is all the Culture they require.

The 4th Sort is an annual Plant with woolly Leaves, which riſes with woolly Stalks about 8 Inches high, garniſhed with oblong Leaves which embrace the Stalks with their Baſe; the Flowers grow in cloſe Cluſters, at the Top and from the Side of their Stalks, which are included in dry ſilvery Empalemeuts.

There is another Species of this with narrower Leaves, not quite ſo woolly; the Stalks riſe higher, and are more branched; the Flowers grow in cloſe Bunches on the Top of the Stalks, and are of a pale yellow.

Both theſe Sorts will come up better from the ſcattered Seeds, than when ſown by Art; but if the Seeds are ſown, it muſt be ſoon after they are ripe, otherwiſe they will not ſucceed. The Plants require no other Care, but to be kept clean from Weeds, and thinned where too cloſe. They flower in *July*, and the Seeds ripen in Autumn.

The 5th Sort is an annual, which grows in many Parts of *England*, on Places covered with Water in the Winter; this is a low branching Plant with ſilvery Leaves and dark Heads of Flowers, but being of no Uſe is not cultivated in Gardens.

The 6th Sort is alſo an annual, with narrow Leaves, hoary on their under Side; the Stalks grow erect about a Foot high, and at every Joint is produced a ſhort Spike of white Flowers. This is found growing naturally in ſome Parts of *England*, ſo is not often admitted into Gardens. If the Seeds of this Sort are permitted to ſcatter, the Plants will come up in Spring with greater Certainty than if ſown, and they will require no Culture. Theſe flower in *July*, and the Plants decay ſoon after they have ripened their Seeds.

The 7th Sort grows naturally in the northern Parts of *England*, on the Tops of Hills and Mountains, where the Shoots which are ſent out from every Side of the Plant put out Roots, whereby it is propagated in great Plenty: The Leaves of this grow cloſe to the Ground, are narrow at their Baſe, but rounded at their End, where they are broad; they are not an Inch long, and hoary on their under Side; the Stalks are ſingle, about 4 Inches high, terminated by a ſingle Corymbus of Flowers. This flowers in *May* and *June*.

There are two Varieties of this, one with a purple and the other a variegated Flower, which have riſen accidentally from Seeds, but continue their Difference in the Gardens. They are eaſily propagated by Offsets, which ſhould be planted in Autumn, in a ſhady Situation, where they will require no other Care but to be kept clean from Weeds. This Plant is called *Pes Cati*, or Catsfoot.

The 8th Sort grows naturally on the *Alps*. This is a low Plant, with under Leaves like the laſt mentioned; the Stalks are ſingle, and about 6 Inches high; they are garniſhed with very ſmall acute Leaves, and terminated by 4 or 5 oblong Flowers, which in ſome Plants are white, and in others of a purpliſh Colour. They appear about the ſame Time as the former Sort, and the Plants may be propagated and treated in the ſame Manner.

The 9th Sort grows naturally in *Spain* and *Italy*. This is a low Plant with a ligneous Stalk, which ſeldom riſes more than 6 Inches high, garniſhed with very narrow Leaves, white on their under Side; the Flowers are produced from the Side of the Stalks, each ſtanding on a ſeparate Stalk; their Empalements are ſcaly and long, ending in acute ſtiff Points, and are of a purpliſh Colour. This Sort flowers in *July*, but ſeldom perfects Seeds in this Country.

The 10th Sort is ſuppoſed to have been brought firſt from *India* to *Portugal*, where it has been long propagated for the Beauty of its golden Heads of Flowers, which, if gathered before they are too open, will continue in Beauty ſeveral Years; ſo that in the Winter Seaſon, they ornament their Churches with theſe Flowers, and many of them are annually brought to *England*, and ſold for Ornaments to the Ladies. Theſe Plants have a ſhort ſhrubby Stalk, ſeldom riſing more than 3 or 4 Inches high, putting out many Heads; the Leaves are narrow and woolly on both Sides, and come out without Order; the Flower Stalks ariſe from theſe Heads; theſe grow 8 or 10 Inches high, are garniſhed all the Way with narrow hoary Leaves, and terminated by a compound Corymbus of bright yellow Flowers, with large Heads. Theſe begin to flower in *May*, and there is a Succeſſion of them moſt Part of Summer. This is propagated by ſlipping off the Heads during any of the Summer Months, and after ſtripping off the lower Leaves, they ſhould be planted in a Bed of light Earth, covering them with Hand Glaſſes, which muſt be ſhaded every Day when the Sun is warm; and the Cuttings muſt be ſupplied with Water frequently, but not in too great Quantities; when theſe are rooted, they ſhould be planted in Pots, and treated as hath been directed for the firſt Sort. Theſe Plants in mild Winters will live abroad in a very warm Border with very little Shelter, and the hardier they are treated, the greater Number of Flowers they will produce; for when they are drawn weak in a Green-houſe, they never flower ſo ſtrong.

The 11th Sort hath very woolly Stalks and Leaves, much longer than thoſe of the tenth; the Stalks riſe a Foot high, ſending out a few Side Branches; theſe are terminated by a compound Corymbus of Flowers, whoſe Heads are ſmall, and of a Gold Colour, changing a little red as they fade. This is propagated by Slips as the laſt mentioned, but the Plants will live in the open Air, if planted on a dry Soil.

The 12th Sort grows naturally in *North America*, but has been long in the *Engliſh* Gardens. This hath a creeping Root, which ſpreads far in the Ground, ſo as to become a troubleſome Weed very often, unleſs kept within Bounds; the Stalks are woolly, riſing a Foot and a Half high, garniſhed with long Leaves ending in acute Points, placed alternate, and woolly on their under Side; the upper Part of the Stalk branches into 2 or 3 Diviſions, each being terminated by a cloſe Corymbus of Flowers, with pretty large ſilvery Empalements, which, if gathered and properly dried, will retain their Beauty ſeveral Years. This Sort will thrive in almoſt any Soil or Situation, and is eaſily propagated by its creeping Roots. It flowers in *June* and *July*, and the Stalks decay in Autumn.

The 13th Sort grows naturally at the *Cape of Good Hope*. This is an annual Plant, which ſends out many oblong blunt Leaves near the Root; the Stalks riſe a Foot and a Half high, garniſhed with Leaves placed alternate, which are broad at their Baſe where they embrace the Stalks, but end in acute Points; they are woolly, and when handled, emit a very rank Odour; the Stalks are terminated by a Corymbus of Flowers, in large ſilvery Empalements, which will retain their Beauty ſeveral Years.

The 14th Sort grows naturally at the *Cape of Good Hope*, and is an annual Plant, very like the former, but the Leaves are of a yellowiſh green on their upper Side, and woolly on their under; the Stalks branch, and the Heads of Flowers are of a bright yellow Colour, and theſe Differences are permanent.

Both theſe Plants are propagated by Seeds, which, if ſown in Autumn on a warm Border, will more certainly ſucceed, than when ſown in Spring; or if the Seeds are permitted to ſcatter, the Plants will come up without Care, and may be tranſplanted while young, to the Places where they are to remain; when the Plants have taken Root, they will require no other Care, but to be kept clean from Weeds. They flower in *July*, and the Seeds ripen in Autumn.

The 15th Sort grows in *Africa*, and *North America*; from both theſe Countries I have received the Seeds. It is an annual Plant, with oblong Leaves at the Bottom, a little waved, and hoary on their under Side. The Stalks riſe about a Foot high, and are garniſhed with acute pointed Leaves; from their Baſe runs a Border or Wing along the Stalk; the whole Plant has a diſagreeable Odour. The Flowers grow in a Corymbus on the Top of the Stalks, are white, and appear in *July*. The Seeds ripen in Autumn, and if permitted to ſcatter, the Plants, will come up without Care, as the two former Sorts.

The 16th Sort riſes with a ſhrubby Stalk 3 or 4 Feet high, ſending out many Branches from the lower Part, garniſhed with narrow Spear-ſhaped Leaves, which half embrace the Stalks with their Baſe; they are of a dark green on their upper Side, but hoary on their under; the Stalks are terminated by a compound Corymbus of yellow Flowers, whoſe Heads are ſmall: Theſe continue in Succeſſion great Part of the Summer, but are rarely ſucceeded by Seeds in *England*. It is eaſily propagated by Cuttings in any of the Summer Months, which may be planted in a ſhady Border, and duly watered. Theſe will take Root in a Month or 5 Weeks, and may then be taken up and planted in Pots, placing them in a ſhady Situation till they have taken freſh Root; then they may be removed to a ſheltered Situation, and placed with other hardy Green-houſe Plants till Autumn, when they muſt be carried into the Green-houſe, where, during the Winter Seaſon, they ſhould have as much free Air as poſſible in mild Weather, for they only require Protection from Froſt, ſo they ſhould be treated as other hardy Green-houſe Plants.

The 17th Sort is an annual Plant, which grows in *France*, *Italy*, and *Spain*. This hath a woolly herbaceous Stalk, 6 or 8 Inches high, garniſhed with obtuſe Spear-ſhaped woolly Leaves. The Flowers are produced in ſhort Spikes from the Side, and at the Top of the Stalks; they are of a ſilvery Colour, and appear in *June* and *July*. The Seeds ripen in Autumn, which, if permitted to ſcatter, the Plants will come up without Care, and require no other Culture but to keep them clean from Weeds.

The 18th Sort grows naturally at the *Cape of Good Hope*; this riſes with a ſlender ſhrubby Stalk, which ſends out many lateral Branches below; theſe are garniſhed with very narrow Leaves, hoary on their under Side. The Flowers are produced in a compound Corymbus at the End of the Branches; they are at their firſt Appearance of a pale red, but afterward Change to a Gold Colour; the Empalements of this Sort are ſmall, and dry like the other Species of this Genus. This Sort is propagated by Cuttings, as the 16th, and requires the ſame Treatment.

The 19th Sort grows naturally in *Iſtria*. This is a perennial Plant, whoſe under Leaves ſpread on the Ground; theſe are obtuſe, and woolly on their under Side; the Stalks riſe about ſix Inches high; the Leaves upon theſe are narrow, ending in acute Points; the Stalks and Leaves are woolly, and at each of the Joints on the upper Part of the Stalks, is produced a compact Corymbus of Flowers, which are placed alternate on each Side, and the Stalk is terminated by a larger Corymbus ſitting very cloſe; theſe are of a fine ſoft red Colour, ſo make a pretty Appearance in the Month of *June*, when they are in Beauty.

This is propagated by Offsets from the Roots, as the 7th and 8th Sorts, but this doth not produce them in Plenty, ſo it is not very common in the *Engliſh* Gardens at preſent. It requires a drier Soil than the 7th, and a warmer Situation, but not too much expoſed to the Midday Sun, ſo ſhould be planted to an Eaſt Aſpect, for it is rarely injured by the Cold in *England*.

The 20th Sort grows naturally at the *Cape of Good Hope*, but has been long in many curious Gardens in *Europe*. Dr. *Linnæus* ſuppoſes this and the 10th to be but one Species, which he might eaſily be inclined to do, by ſeeing the dried Specimens only; for theſe ſeem only to differ in the Colour of their Flowers or Heads, which he never admits a ſa ſpecifick Difference. Thoſe who have obſerved the growing Plants, cannot doubt of their being two diſtinct Species; for the Stalks of this riſe 3 or 4 Feet high, ſending out ſeveral long irregular Branches, terminated by a compound Corymbus of Flowers; whereas the 10th Sort never riſes with a Stalk, but the Heads ſit cloſe to the Ground, and the Flower Stalks riſe ſingle from the Heads, and never branch: The Heads of this 20th Sort are compoſed of Leaves, much longer than thoſe of the 10th, and the Heads of the Flowers are of a bright Silver Colour. This is propagated by Cuttings, which ſhould be planted and treated as hath been directed for the 10th Sort.

The 21ſt Sort was raiſed from Seeds in the *Chelſea* Garden, which came from the *Cape of Good Hope*; the lower Leaves of this are oblong and blunt. The Stalks are ſhrubby, and divide into many irregular Branches, which riſe about 3 Feet high; theſe are garniſhed with oblong blunt-pointed Leaves, hoary on their under Side, but of a dark green above; from the Baſe of the Leaves runs a Border along the Stalk, like a Wing, of the ſame

Conſiſtence with the Leaves, ſo is what the former Botaniſts termed a winged Stalk, but Dr. *Linnæus* calls it a running Leaf. The Stalks are terminated by a compound Corymbus of Flowers, very cloſely joined together, and of a bright Gold Colour, but the Flowers are ſmall, and change to a darker Colour as they fade; there is a Succeſſion of theſe Flowers moſt Part of the Summer, and the early Flowers are frequently ſucceeded by Seeds in *England*. This Sort may be propagated by Slips, or Cuttings, and the Plants treated as the 10th.

The 22d Sort grows naturally in *North America*, from whence the Seeds have been brought to *England*; this is a perennial Plant, whoſe lower Leaves are large and and oval; from the main Stalk there come out Runners, which take Root in the Ground, and have young Plants at their Extremity. The Stalks are ſingle, and garniſhed with narrower woolly Leaves, placed alternate. The Flowers are produced at the Top of the Stalks in a Corymbus; they are of a white Colour, and ſmall. They appear in *June* and *July*, and ſometimes are ſucceeded by Seeds, but the Plants propagate ſo faſt by Off-sets, that the Seeds are little regarded; this will thrive in the open Air, if planted in a dry Soil and warm Situation.

The 23d Sort grows naturally in *North America*; it is an annnual Plant with woolly obtuſe Leaves. The Stalks are ſingle, and riſe about 9 Inches high. The Flowers grow in Spikes from the Side of the Stalks; they are a dirty white, ſo make no great Appearance. If the Seeds of this are permitted to ſcatter, the Plants will riſe without Trouble, and only require to be kept clean from Weeds.

The 24th Sort grows naturally in *Jamaica*, and other of the hot Parts of *America*; this riſes with a ſhrubby Stalk, about 2 Feet high, garniſhed with Leaves about the Size and Shape of thoſe of Sage, but woolly on their under Side, and much veined; from the Baſe of each Leaf runs a Border along the Stalk. The Flowers are produced in Spikes from the Side, and at the End of the Stalk; theſe are long, and cloſely joined in the Spike. It flowers in *July* and *Auguſt*, but never perfects Seeds in *England*.

It is propagated by Seeds, which ſhould be ſown on a hot Bed in Pots, becauſe the Plants do not often riſe the ſame Year, therefore when it ſo happens, the Pots ſhould be placed in the Stove in Winter, and the following Spring put upon a freſh hot Bed to bring up the Plants; when theſe appear, they muſt be planted into Pots, and kept conſtantly in the hot Bed, otherwiſe they will not thrive in *England*.

GNAPHALODES. *See* Micropus.

GOMPHRENA. *Lin. Gen. Pl.* 279. *Amaranthoides. Tourn. Inſt. R. H.* 654. *Tab.* 420.

The *Characters* are,

The Flower hath a large 3 leaved Empalement, coloured and permanent. The Petal is erect and cut into 5 Parts at Top; it hath a cylindrical tubulous Empalement, the Length of the Petal, cut into 5 ſmall Parts at the Brim, which ſpread open; it hath 5 Stamina ſcarcely diſcernable, ſituated in the Brim of the Nectarium, terminated by Summits, ſhut up in the Mouth of the Nectarium. In the Center is ſituated an oval pointed Germen, with 2 ſmall Styles, crowned with ſingle Stigmas, the Length of the Stamina. The Germen becomes one large roundiſh Seed, incloſed in a thin cruſted Capſule with one Cell.

The *Species* are,

1. GOMPHRENA *caule erecto, foliis ovato-lanceolatis, capitulis ſolitariis, pedunculis diphyllis. Hort. Cliff.* 86. *Gomphrena* with an erect Stalk, oval Spear-ſhaped Leaves, ſingle Heads, and Foot Stalks having two Leaves. *Amaranthoides Lychnidis folio, capitulis purpureis. Tourn. Inſt. R. H.* 654. Globe *Amaranthus* with purple Heads.

2. GOMPHRENA *caule erecto, ſpicâ interruptâ. Prod. Leyd.* 419. *Gomphrena* with an erect Stalk, and an interrupted Spike of Flowers.

3. GOMPHRENA *foliis lanceolatis, capitulis diphyllis, floſculis perianthio proprio diſtinctis. Lin. Sp. Pl.* 224. *Gomphrena* with Spear-ſhaped Leaves, two Leaves to the Heads, and each Floret having its proper Empalement. *Amaranthoides perenne, floribus ſtramineis radiatis. Hort. Elth.* 24. *Tab.* 20. Perennial Globe *Amaranthus* with radiated Straw-coloured Flowers.

4. GOMPHRENA *foliis carnoſis obtuſis, capitulis oblongis terminalibus. Lin. Sp. Pl.* 224. *Gomphrena* with obtuſe fleſhy Leaves, and oblong Heads terminating the Stalks. *Amaranthoides humile Curaſſavicum, cepeæ foliis lucidis, capitulis albis. Herm. Par. Bat.* 15. *Tab.* 15. Low Globe *Amaranthus* of *Curaſſao* with ſhining Onion Leaves, and white Heads.

5. GOMPHRENA *caule ſcandente, foliis ovato-lanceolatis, pedunculis nudis longiſſimis ſpicâ interruptâ. Gomphrena* with a climbing Stalk, oval Spear-ſhaped Leaves, very long naked Foot Stalks, and an interrupted Spike. *Amaranthoides Lychnidis folio ſpicato, ſquamis herbaceis, floſculiſque purpuraſcentibus. Houſt. Mſſ.* Spiked *Amaranthoides* with a Campion Leaf, herbaceous Scales, and purpliſh Flowers.

6. GOMPHRENA *caule erecto, foliis lanceolatis, capitulatis alaribus ſeſſilibus. Gomphrena* with an erect Stalk, Spear-ſhaped Leaves, and Heads on the Sides of the Stalks ſitting cloſe. *Amaranthoides Lychnidis folio, capitulis argenteis minoribus foliorum alis prodeuntibus. Houſt. Mſſ.* Globe *Amaranthus* with a Campion Leaf, and ſmaller ſilvery Heads proceeding from the Wings of the Leaves.

7. GOMPHRENA *caule repente, capitulis rotundis ſeſſilibus, foliis lanceolato-ovatis. Lin. Sp. Pl.* 225. *Gomphrena* with a creeping Stalk, round Heads ſitting cloſe to the Stalks, and oval Spear-ſhaped Leaves. *Amaranthoides marina repens, polygoni folio, capitulis argenteis. Plum. Cat.* 20. Creeping maritime Globe *Amaranthus* with a Knot Graſs Leaf, and ſilvery Heads.

8. GOMPHRENA *caule repente dichotomo villoſo, foliis lanceolatis, capitulis alaribus ſeſſilibus. Gomphrena* with a creeping Stalk divided by Pairs, and hairy Spear-ſhaped Leaves, and Heads of Flowers ſitting cloſe to the Sides of the Stalks. *Amaranthoides humile Curaſſavicum folio polygoni. Par. Bat. Prod.* 17. Low Globe *Amaranthus* of *Curaſſao*, with a Knot Graſs Leaf.

9. GOMPHRENA *caule procumbente, foliis inferioribus lanceolatis, ſuperioribus rotundatis capitulis laxis terminalibus. Gomphrena* with a trailing Stalk, the under Leaves Spear-ſhaped, the upper round, and looſe Heads terminating the Stalks. *Amaranthoides Lychnidis folio,*

capitulis purpureis minoribus. Houſt. Mſſ. Globe *Amaranthus* with a Campion Leaf, and ſmaller purple Heads.

10. GMPHRENA *pedunculis oppoſitis bifidis tricapitatis capitulo intermedio ſeſſili. Lin. Sp. Pl.* 224. *Gomphrena* with bifid oppoſite Foot Stalks, having three Heads; the Middle one ſitting cloſe to the Stalk. *Amaranthoides Scandens Lychnidis folio, capitulis globoſis flaveſcentibus. Houſt. Mſſ.* Climbing Globe *Amaranthus* with a Campion Leaf, and yellowiſh Heads of Flowers.

The 1ſt Sort grows naturally in *India*, from whence the Seeds were brought to *Europe*, and the Plants have been many Years cultivated in all the curious Gardens; it is an annual Plant, which riſes with an upright branching Stalk about 2 Feet high, garniſhed with Spear-ſhaped Leaves, placed oppoſite. The Branches alſo come out oppoſite, and the Foot Stalks of the Flowers, which are long and naked, with two ſhort Leaves, cloſe under each Head of Flowers. The Heads, at their firſt Appearance, are globular, but as they increaſe in Size, become oval; theſe are compoſed of dry ſcaly Leaves placed *Imbricatim* like the Scales of Fiſh; under each of theſe is ſituated a tubulous Flower, which juſt peeps out of the Covering, but theſe are not much regarded by the Generality of People, for the ſcaly Empalement which covers them is ſo beautiful, and theſe if gathered before they are too much faded, will retain their Beauty ſeveral Years. After the Flowers are paſt, the Germen, which is ſituated in the Bottom of each, becomes a large oval Seed, incloſed in a chaffy Covering, which ripens late in Autumn, and the Plant decays ſoon after.

There are two Varieties of this Sort, one with fine bright purple, the other hath white or ſilvery Heads, and theſe never alter from Seeds, ſo that they are permanent Varieties, though in other Reſpects they do not differ; there is alſo one with mixed Colours, but whether this aroſe accidentally from the Seeds of either of the former, I cannot determine, for this Variety continues from Seeds, and the other two I have cultivated more than 30 Years, and never found either of them vary.

There are alſo two Varieties of theſe which grow naturally in the *Weſt Indies*, one with purple, and the other with white Heads, which are much ſmaller and rounder than thoſe before-mentioned. The Plants grow much larger, and ſpread more into Branches, and they are later before the flower, ſo that in cold Seaſons the Seeds rarely ripen in *England*; theſe are called Batchelors Buttons, by the Inhabitants of *America*, but whether they are ſpecifically different from the others, I cannot with Certainty determine.

The 2d Sort hath much ſlenderer Stalks than the firſt, which grow taller, and are irregular. The Leaves are ſmaller, but of the ſame Shape. The Flowers grow in Spikes at the End of the Branches, which are broken or divided into 3 or 4 Parts, with Spaces between them. The Spikes are ſmall, and of a pale purple Colour. The Seeds of this Sort were ſent me by Dr. *Houſtoun* from *Campeachy*.

The 3d Sort hath ſlender upright Stalks, garniſhed with Spear-ſhaped Leaves placed oppoſite; they are hairy, and ſit cloſe to the Stalks; theſe are hairy, and terminated by ſmall Heads of Flowers, which ſpread open from each other, ſo that the Empalements appear diſtinct; theſe are of a pale Straw Colour, and appear in *July*. The Seeds, ſometimes, will ripen in *England*, but the Plants will live 2 or 3 Years, if preſerved in a Stove.

The 4th Sort hath creeping Stalks, which put out Roots at their Joints, as they trail on the Ground; theſe are garniſhed with narrow fleſhy ſucculent Leaves, of a lucid green. The Flowers are produced on Foot Stalks, which grow at the End and Side of the Stalks; they are collected in ſmall, oblong, ſilvery Heads, which have dry Empalements like the other Sorts. This grows naturally in moſt of the Iſlands of the *Weſt-Indies*.

The 5th Sort hath a thick fleſhy Root, which ſtrikes deep into the Ground, from which ariſes an inclining Stalk, three or four Feet high, which requires Support, otherwiſe it will fall to the Ground. The Leaves grow by Pairs, oppoſite, and are oval Spear-ſhaped. The Foot Stalks of the Flowers are long and naked, and terminated by interrupted Spikes of Flowers, which are ſmall, quinquefid, and of a purpliſh Colour; theſe are ſucceeded by ſingle Seeds, wrapped up in a Down. It grows naturally at *La Vera Cruz*, in *New Spain*, from whence the late Dr. *Houſtoun* ſent the Seeds.

The 6th Sort grows naturally at *St. Helena*, from whence I received the Seeds; this hath an upright Stalk, 2 Feet high, which never branches out into Stalks, as moſt of the other Sorts, but has ſhort Foot Stalks coming out by Pairs at the Joints; theſe, and alſo the upright Stalk, are garniſhed with Spear-ſhaped ſmooth Leaves. The Flowers are produced in ſmall ſilvery Heads at the Wings of the Stalks; theſe appear in *July* and *Auguſt*, and the Seeds ripen in Autumn.

The 7th Sort hath creeping Stalks, which put out Roots at the Joints as they trail on the Ground; theſe are garniſhed with ſmall, Spear-ſhaped, oval Leaves, placed oppoſite. The Flowers are produced in round ſilvery Heads, ſitting cloſe to the Stalks, and are each ſucceeded by a ſingle oval Seed, wrapped up in a Down. It grows naturally in all the *Weſt-Indian* Iſlands.

The 8th Sort grows naturally in *Jamaica*, from whence I received the Seeds; this Sort hath creeping Stalks, which divide by Pairs, and are hairy; theſe put out Roots at their Joints, and ſpread to a great Diſtance; they are garniſhed with Spear-ſhaped Leaves, placed oppoſite, and at each Joint the Flowers are produced in ſmall ſilvery Heads, ſitting cloſe to the Stalks. This flowers in *July*, and the Seeds ripen in Autumn.

The 9th Sort hath trailing Stalks, which below are garniſhed with Spear-ſhaped Leaves, but at the Top they are round. The Stalks and Leaves of this are hairy. The Flowers terminate the Stalks in ſmall round purple Heads, which are looſe; theſe are ſucceeded by ſingle Seeds wrapped up in a Down.

The 10th Sort hath climbing Stalks, which riſe upward of 20 Feet, where they meet with Support; theſe are garniſhed with Leaves like Campion, placed oppoſite. The Flowers are produced on long Foot Stalks, which come out oppoſite; theſe branch out into ſmaller Foot Stalks, each ſuſtaining three Heads of yellow Flowers, the Middle one ſitting cloſe to the Stalk.

The two Sorts with large Heads of Flowers which are firſt mentioned, one with purple, and the other with Silver-coloured, are very ornamental Plants in Gardens, and are now very very commonly cultivated in *Engliſh* Gardens for that Reaſon. In *Portugal*, and other warm Countries, they are cultivated to adorn their Churches in Winter, for if theſe are gathered when full grown, and dried in the Shade, they will retain their Beauty a long Time, eſpecially if not expoſed to the Air; theſe Plants are annual, ſo are only propagated by Seeds, which ſhould be ſown on a good hot Bed the Beginning of *March*; but if the Seeds are not taken out of their chaffy Covering, it will be proper to ſoak them in Water for twelve Hours before they are ſown, which will greatly facilitate their growing. When the Plants are half an Inch high, they ſhould be tranſplanted on a freſh hot Bed, at about 4 Inches Diſtance, obſerving to ſhade them till they have taken Root; then they ſhould have freſh Air admitted to them every Day, in Proportion to the Warmth of the Seaſon; they will alſo require to be frequently refreſhed with Water. In about a Month's Time the Plants will have grown ſo large, as to nearly meet, therefore they will require more Room, otherwiſe they will draw up weak; then a freſh hot Bed ſhould be prepared, into which there ſhould be a ſufficient Number of Threefarthing Pots plunged, filled with light rich Earth, and when the Bed is in a proper Temperature of Warmth, the Plants ſhould be carefully taken up with Balls of Earth to their Roots, and each planted into a ſeparate Pot, obſerving to ſhade them till they have taken new Root, and afterward they muſt be treated as other tender exoticks. When the Plants have filled theſe Pots with their Roots, they ſhould be ſhaken out of the Pots, and their Roots on the Outſide of the Ball of Earth muſt be carefully pared off; then they ſhould be put into Pots a Size larger, and where there is Conveniency of a deep Frame, to plunge the Pots into another gentle hot Bed, it will bring the Plants early to flower, and cauſe them to grow much larger than thoſe which are placed abroad. In *July* the Plants ſhould be inured gradually to bear the open Air, into which they may be removed about the Middle of that Month, and intermixed with other annuals to adorn the Pleaſure Garden, but it will be proper to keep a Plant or two of each Sort in Shelter for Seeds, becauſe when the Autumn proves cold or wet, thoſe Plants which are expoſed, ſeldom produce good Seeds.

The other Sorts are all of them tender Plants, ſo require to be raiſed on a hot Bed, and the Plants treated as the former Sorts, and if the trailing Sorts are turned out of the Pots when their Roots have filled them, and planted on a hot Bed, their Stalks will put out Roots at their Joints, and their branching Stalks will extend to a conſiderable Diſtance on every Side, and they will produce their Heads of Flowers at every Joint, but unleſs the Glaſſes are kept over them, and only a proper Share of Air admitted to them, they will not perfect Seeds in *England*.

The perennial climbing Sorts muſt be removed into the Bark Stove, and plunged into the back Side of the Tan Bed, where they may have Room to grow in Height, eſpecially the 10th Sort, which will riſe to a great Height with proper Management; theſe Sorts ſeldom flower till the ſecond Year, and the Plants will live 3 or 4 Years, if preſerved in a Stove.

Theſe Sorts are not very ornamental, ſo are ſeldom cultivated but in Botanick Gardens for Variety.

GOOSEBERRY. *See* Groſſularia.

GORZ. *See* Ulex.

GOSSYPIUM. *Lin. Gen. Pl.* 755. *Xylon. Tourn. Inſt. R. H.* 101. *Tab.* 27. Cotton.

The *Characters* are,

The Flower has a double Empalement; the outer is large, of 1 Leaf, and cut half Way into 3 Parts; the inner is Cup-ſhaped, of 1 Leaf, cut into 5 obtuſe Segments at the Top, which are indented. It hath 5 plain Heart-ſhaped Petals, which join at their Baſe and ſpread open. It hath a great Number of Stamina, joined at Bottom in a Column, but are looſe above, and inſerted into the Petals; theſe are terminated by Kidney-ſhaped Summits. It hath a round Germen, ſupporting 4 Styles, joined in the Column, and are the ſame Length of the Stamina, crowned by 4 thick Stigmas. The Germen becomes a roundiſh Capſule, ending in a Point, having 4 Cells, filled with oval Seeds, wrapped up in Down.

The *Species* are,

1. Gossypium *foliis quinquelobis, caule herbaceo. Hort. Upſ.* 203. Cotton with Leaves having 5 Lobes, and an herbaceous Stalk. *Goſſypium. Camer. Epit.* 203. *Goſſypium. Camer. Epit.* 203. The common herbaceous Cotton.

2. Gossypium *foliis trilobis integerrimis. Hort. Upſ.* 204. Cotton with entire Leaves having 3 Lobes, *Goſſypium frutescens annuum, folio trilobo Barbadenſe. Pluk. Alm.* 172. *Tab.* 188. Shrubby annual *Barbadoes* Cotton with Leaves having 3 Lobes.

3. Gossypium *foliis palmatis, lobis lanceolatis, caule fruticoſo. Lin. Sp. Pl.* 693. Cotton with Hand-ſhaped Leaves, having 5 Spear-ſhaped Lobes, and a ſhrubby Stalk. *Xylon arboreum, flore flavo. Tourn. Inſt. R. H.* 101. Tree Cotton with a yellow Flower.

4. Gossypium *foliis trilobis & quinquelobis acutis, caule ramoſo hirſuto.* Cotton with Leaves having 3 and 5 Lobes, ending in acute Points, and a hairy branching Stalk. *Xylon Americanum præſtantiſſimum, ſemine vireſcente. Lign. Tourn. Inſt. R. H.* 101. Fineſt *American* Cotton with a green Seed.

The 1ſt Sort is the common *Levant* Cotton, cultivated in ſeveral Iſlands of the *Archipelago*, alſo in *Malta*, *Sicily*, and the Kingdom of *Naples*; it is ſown in tilled Ground in the Spring of the Year, and is ripe in about four Months after, when it is cut down in Harveſt as Corn is in *England*, and is ſown every Year, the Plants always periſhing ſoon after the Seeds are ripe; this Plant grows about 2 Feet high, with an herbaceous Stalk, garniſhed with ſmooth Leaves divided into 5 Lobes. The Stalks ſend out a few weak Branches upward, garniſhed with Leaves of the ſame Form but ſmaller. The Flowers are produced at the Extremity of the Branches; theſe have 2 large Empalements, the outer is cut into 3 Parts, the inner into five. The Petals of the Flower are of a pale yellow Colour, inclining to white; they are ſucceeded by oval Capſules, which open in 4 Parts, having 4 Cells, filled with Seeds wrapped up in a Down, which is the Cotton.

The 2d Sort grows naturally in ſeveral Iſlands of the *Weſt-Indies*; this riſes with a ſhrubby ſmooth Stalk, 4 or 5 Feet high, ſending out a few Side Branches, garniſhed with ſmooth Leaves, divided into 3 Lobes. The Flowers are produced at the End of the Branches, which are ſhaped like thoſe of the former Sort, but are larger, larger, and of a deeper yellow. The Pods are larger and the Seeds black.

The 3d Sort hath a perennial ſhrubby Stalk, which riſes 6 or 8 Feet high, and divides into many Branches; theſe are ſmooth, and are garniſhed with Hand-ſhaped Leaves, having 4 or 5 Lobes. The Flowers are produced at the End of the Branches; theſe are larger than thoſe of the 2 former Sorts, and are of a deep yellow Colour. The Pods of this Sort are larger than thoſe of the former.

The 4th Sort is a Native of the *Eaſt* and *Weſt-Indies*, from whence the Seeds have been brought to *Europe*; this is alſo an annual Plant, which periſhes ſoon after the Seeds are ripe. It riſes to the Height of 3 Feet or more, and ſends out many lateral Branches, which extend to a great Diſtance, where they are allowed Room to grow; theſe are hairy, and garniſhed with Leaves, having in ſome 3, and others 5 acute-pointed Lobes; theſe have ſhort hairy Down on their Surface. The Flowers are produced from the Side, and at the End of the Branches; they are large, of a dirty Sulphur Colour, each Petal having a large purple Spot at the Baſe; theſe are ſucceeded by oval Pods, which open into 4 Cells, filled with oblong green Seeds, wrapped up in a ſoft Down. Where the Plants have Room to ſpread, their Branches will produce 4 or 5 Pods of Cotton upon each, ſo that from a ſingle Plant, 20 or more Pods may be produced, and each of theſe as large as middling Apples, ſo there will be a much greater Produce from this than from any other Sort, and the Staple is much finer; therefore it is well worth the Attention of the *Britiſh* Colonies in *America* to cultivate and improve this Sort, ſince it will ſucceed in *Carolina*, where it has been cultivated for ſome Years, and might be a Commodity worthy of Encouragement by the Publick, could they contrive a proper Gin to ſeparate the Cotton from the Seeds to which this Sort adheres much cloſer than any of the others, the Cotton from this Shrub being preferable to any other yet known.

All theſe Sorts are very tender Plants, therefore will not thrive in the open Air in *England*, but are frequently ſown in curious Gardens for Variety; the 1ſt and 4th Sorts will produce ripe Seeds in *England*, if the Seeds are ſown early in the Spring, on a good hot Bed; and when the Plants are come up, planted each into ſeparate Pots, and plunged into a hot Bed of Tanners Bark to bring them forward, and when they are grown too tall to remain under the Frames, removed into the Tan Bed in the Stove, and ſhifted into larger Pots, when their Roots have filled the other; with this Management I have had their Flowers appear in *July*, and toward the End of *September* the Seeds have been perfectly ripe, and the Pods as large as thoſe produced in the *Eaſt* and *Weſt-Indies*; but if the Plants are not brought forward early in the Spring, it will be late in the Summer before the Flowers will appear, and there will be no Hopes of the Pods coming to Perfection.

The Shrub Cotton will riſe from the Seeds very eaſily, if they are ſown upon a good hot Bed; and when they are ſown early in the Spring, and brought forward as directed for the former Sorts, the Plants will grow to be 5 or 6 Feet high the ſame Summer; but it is difficult to preſerve the Plants through the Winter, unleſs they are hardened gradually in *Auguſt* during the Continuance of the warm Weather; for when they are forced on at that Time, they will be ſo tender, as to render them incapable of reſiſting the leaſt Injury. The Plants of this Sort muſt be placed in the Bark Stove in Autumn, and kept in the firſt Claſs of Heat, otherwiſe they will not live through the Winter in *England*.

GRAFTING is the taking a Shoot from one Tree, and inſerting it into another, in ſuch a Manner, that both may unite cloſely, and become one Tree; this is called by the ancient Writers in Huſbandry and Gardening, Inciſion, to diſtinguiſh it from Inoculating, or Budding, which they call *inſerere Oculos*.

The Uſe of Grafting is to propagate any curious Sorts of Fruits, ſo as to be certain of the Kinds, which cannot be done by any other Method; for as all the good Fruits have been accidentally obtained from Seeds, ſo the Seeds of theſe, when ſown, will many of them degenerate, and produce ſuch Fruit as are not worth cultivating; but when Shoots are taken from ſuch Trees as produce good Fruit, theſe will never alter from their Kind, whatever be the Stock, or Tree, on which they are grafted; for though the Grafts receive their Nouriſhment from the Stocks, yet they are never altered by them, but continue to produce the ſame Kind of Fruit as the Tree from which they were taken; the only Alteration is, that when the Stocks on which they are grafted do not grow ſo faſt, and afford a ſufficient Supply of Nouriſhment to the Grafts, they will not make near ſo great Progreſs as they otherwiſe would do, nor will the Fruit they produce be ſo fair, and ſometimes not ſo well flavoured.

Theſe Shoots are termed *Cions*, or *Graffs*; in the Choice of theſe the following Directions ſhould be carefully obſerved. 1ſt, That they are Shoots of the former Year, for when they are older, they never ſucceed well. 2dly, Always to take them from healthy fruitful Trees, for if the Trees are ſickly from whence they are taken, the Grafts very often partake ſo much of the Diſtemper, as rarely to get the better of it, at leaſt for ſome Years; and when they are taken from young luxuriant Trees, whoſe Veſſels are generally large, they will continue to produce luxuriant Shoots, and are ſeldom ſo fruitful as thoſe taken from fruitful Trees, whoſe Shoots are more compact, and the Joints cloſer together, at leaſt it will be a great Number of Years before theſe luxuriant Grafts begin to produce Fruit, if they are managed with the greateſt Skill. 3dly, You ſhould prefer thoſe Grafts taken from the lateral, or horizontal Branches, to thoſe from the ſtrong perpendicular Shoots, for the Reaſons before given.

Theſe Grafts, or Cions, ſhould be cut off from the Trees before their Buds begin to ſwell, which is generally three Weeks or a Month before the Seaſon for grafting, therefore, when they are cut off, they ſhould be laid in the Ground with the Cut downwards, burying them half their Length, and covering their Tops with dry Litter, to prevent their drying; if a ſmall Joint of the former Year's Wood is cut off with the Cion, it will preſerve it the better, and when they are grafted, this may be cut off; for at the ſame Time the Cions muſt be cut to a proper Length, before they are inſerted into the Stocks, but, till then, the Shoots ſhould remain their full Length, as they were taken from the Tree, which will preſerve them better from ſhrinking; if theſe Cions are to be carried to a conſiderable Diſtance, it will be proper to put their cut Ends into a Lump of Clay, and to wrap them up in Moſs, which will preſerve them freſh for a Month, or longer; but theſe ſhould be cut off earlier from the Trees, than thoſe which are to be grafted near the Place where the Trees are growing.

Having given Directions for the Cions and Grafts, we next come to that of the Stock, which is a Term applied to the Trees intended for grafting; theſe are either ſuch old Trees as are already growing in the Places where they are to remain, whoſe Fruit is intended to be changed, or young Trees which have been raiſed in a Nurſery for a Supply to the Garden; in the former Caſe there is no other Choice, but that of the Branches, which ſhould be ſuch as are young, healthy, well ſituated, and have a ſmooth Bark; if theſe Trees are growing againſt Walls, or Eſpaliers, it will be proper to graft 6, 8, or 10 Branches, according to the Size of the Trees, by which Method they will be much ſooner furniſhed with Branches again, than when a leſs Number of Cions are put in; but in Standard Trees, 4, or at moſt 6 Cions will be ſufficient.

In the Choice of young Stocks for grafting, you ſhould always prefer ſuch as have been raiſed from the Seed, and that have been once or twice tranſplanted. Next to theſe, are thoſe Stocks which have been raiſed from Cuttings, or Layers, but thoſe which are Suckers from Roots of other Trees, ſhould always be rejected, for theſe are never ſo well rooted as the others, and conſtantly put out a great Number of Suckers from their Roots, whereby the Borders and Walks of the Garden will be always peſtered with them during the Summer Seaſon, which is not only unſightly, but they alſo take off Part of the Nouriſhment from the Trees.

If theſe Stocks have been allowed a proper Diſtance in the Nurſery where they have grown, the Wood will be better ripened, and more compact than thoſe which have grown cloſe, and have been thereby drawn up to a greater Height; the Wood of theſe will be ſoft, and their Veſſels large, ſo that the Cions grafted into them will ſhoot very ſtrong, but they will be leſs diſpoſed to produce Fruit than the other, and when Trees acquire an ill Habit at firſt, it will be very difficult to reclaim them afterward.

Having directed the Choice of Cions and Stocks, we come next to the Operation, in order to which you muſt be provided with the following Tools.

1. A neat ſmall Hand Saw to cut off the Heads of large Stocks.
2. A good ſtrong Knife with a thick Back, to make Clefts in the Stocks.
3. A ſharp Penknife to cut the Grafts.
4. A grafting Chiſſel and a ſmall Mallet.
5. Baſs Strings, or woollen Yarn, to tie the Grafts with, and ſuch other Inſtruments and Materials as you ſhall find neceſſary, according to the Manner of grafting you are to perform.
6. A Quantity of Clay, which ſhould be prepared a Month before it is uſed, and kept turned and mixed, like Mortar every other Day, which is to be made after the following Manner:

Get a Quantity of ſtrong fat Loam (in Proportion to the Quantity of Trees intended to be grafted,) then take ſome new Stonehorſe Dung, and break it in amongſt the Loam, and if you cut a little Straw, or Hay, very ſmall, and mix among it, the Loam will hold together the better; and if there be a Quantity of Salt added, it will prevent the Clay from dividing in dry Weather; theſe muſt be well ſtirred together, putting Water to them after the Manner of making Mortar; it ſhould be hollowed like a Diſh, and filled with Water, and kept every other Day ſtirred; but it ought to be remembered, that it ſhould not be expoſed to the Froſt, or drying Winds, and that the oftener it is ſtirred and wrought the better.

Of late Years ſome Perſons have made uſe of another Compoſition for grafting, which they have found to anſwer the Intention of keeping out the Air, better than the Clay before preſcribed. This is is compoſed of Turpentine, Bees Wax, and Roſin, melted together, which, when of a proper Conſiſtence, may be put on the Stock round the Graft, in the ſame Manner as the Clay is uſually applied, and though it be not above a Quarter of an Inch thick, yet will keep out the Air more effectually than the Clay, and as Cold will harden this, there is no Danger of its being hurt by Froſt, which is very apt to cauſe the Clay to cleave, and ſometimes fall off; and when the Heat of Summer comes on, this Mixture will melt, and fall off without any Trouble. In uſing this, there ſhould be a Tin, or Copper Pot, with Conveniency under it to keep a very gentle Fire with Small Coal, otherwiſe the Cold will ſoon condenſe the Mixture, but you muſt be careful not to apply it too hot, leſt you injure the Graft. A Perſon who is a little accuſtomed to this Compoſition, will apply it very faſt, and it is much eaſier for him than Clay, eſpecially if the Seaſon ſhould prove cold.

There are ſeveral Ways of Grafting, the principal of which are four:

1. Grafting in the Rind, called alſo Shoulder-grafting, which is only proper for large Trees; this is called Crown-grafting, becauſe the Grafts are ſet in Form of a Circle, or Crown, and is generally performed about the latter End of *March*, or the Beginning of *April*.

2. Cleft-grafting, which is alſo called Stock, or Slit-grafting; this is proper for Trees or Stocks of a leſſer Size, from an Inch to two Inches or more Diameter; this Grafting is to be performed in the Months of *February* and *March*, and ſupplies the Failure of the Eſcutcheon Way, which is practiſed in *June*, *July*, and *Auguſt*.

3. Whip-grafting, which is alſo called Tongue-grafting; this is proper for ſmall Stocks of an Inch, half an Inch, or leſs, Diameter; this is the moſt effectual Way of any, and that which is moſt in Uſe.

4. Grafting by Approach, or Ablactation; this is to be performed when the Stock you would graft on, and the Tree from which you take your Graft, ſtand ſo near together, that they may be joined; this is to be performed in the Month of *April*, and is alſo called Inarching, and is chiefly uſed for Jaſmines, Oranges, and other tender exotick Trees.

We next come to the Manner of performing the ſeveral Ways of grafting.

The 1ſt Method which is termed Rind, or Shoulder-grafting, is ſeldom practiſed, but on large Trees, where either the Head, or the large Branches, are cut off horizontally, and 2 or 4 Cions put in, according to the Size of the Branch, or Stem; in doing this, the Cions are cut flat on one Side, with a Shoulder to reſt upon the Crown of the Stock; then the Rind of the Stock muſt be raiſed up to admit the Cion between the Wood and the Bark of the Stock, which muſt be inſerted about 2 Inches, ſo as the Shoulder of the Cion may meet, and cloſely join the Crown of the Stock; and after the Number of Cions are inſerted, the whole Crown of the Stock ſhould be well clayed over, leaving two Eyes of the Cions uncovered therewith; which will be ſufficient for ſhooting; this Method of grafting was much more in Practice formerly than at preſent; the Diſcontinuance of it was occaſioned by the ill Succeſs it was attended with, for as theſe Cions were placed between the Rind of the Stock and the Wood, ſo they were frequently blown out by ſtrong Winds, after they had made large Shoots, which has ſometimes happened after 5 or 6 Years Growth, ſo that whenever this Method is practiſed, there ſhould be ſome Stakes faſtened to ſupport the Cions, until they have almoſt covered the Stock.

The next Method is termed Cleft, or Stock-grafting; this is practiſed upon Stocks, or Trees, of a ſmaller Size, and may be uſed with Succeſs, where the Rind of the Stock is not too thick, whereby the inner Bark of the Cion will be prevented joining to that of the Stock; this may be performed on Stocks, or Branches, which are more than one Inch Diameter; in doing of this, the Head of the Stock, or Branch, muſt be cut off with a Slope, and a Slit made the contrary Way, in the Top of the Slope, deep enough to receive the Cion, which ſhould be cut ſloping like a Wedge, ſo as to fit the Slit made in the Stock, being careful to leave that Side of the Wedge, which is to be placed outward, much thicker than the other, and in putting the Cion into the Slit of the Stock, there muſt be great Care taken to join the Rind of the Cion to that of the Stock, for if theſe do not unite, the Grafts will not ſucceed; when this Method of Grafting is uſed to Stocks which are not ſtrong, it will be proper to make a Ligature of Baſs, to prevent the Slit of the Stock from opening; then the Whole ſhould be clayed over, to prevent the Air from penetrating the Slit, ſo as to deſtroy the Grafts, only leaving two Eyes of the Cions above the Clay for ſhooting.

The 3d Method is termed Whip, or Tongue-grafting, which is the moſt commonly practiſed of any by the Nurſery Men near *London*, eſpecially for ſmall Stocks, becauſe the Cions much ſooner cover the Stocks in this Method, than in any other.

This is performed by cutting off the Head of the Stocks ſloping; then there muſt be a Notch, made in the Slope toward the upper Part downward, a little more than half an Inch deep, to receive the Cion, which muſt be cut with a Slope upward, and a Slit made in this Slope like a Tongue, which Tongue muſt be inſerted into the Slit made in the Slope of the Stock, and the Cion muſt be placed on one Side of the Stock, ſo as that the two Rinds of both Cion and Stock, may be equal, and join together exactly; then there ſhould be a Ligature of Baſs to faſten the Cion, ſo as that it may not be eaſily diſplaced, and afterward clay it over, as in the former Methods.

The 4th Sort of Grafting is termed Inarching-grafting, by Approach, or Ablactation. This is only to be performed when the Stocks, deſigned to be grafted, and the Tree from which the Graft is to be taken, ſtand ſo near together, or may be brought ſo near together, as that their Branches may be united together; this Method of Grafting is commonly practiſed on tender exotick Plants, and ſome other Sorts which do not ſucceed in any of the other Methods.

In performing this Operation, a Part of the Stock, or Branch, muſt be cut off about two Inches in Length, obſerving always to make Choice of a ſmooth Part of the Stock; then a ſmall Notch ſhould be made in the Stock downward, as hath been directed for Whip-grafting; then the Branch of the Tree deſigned to be inarched, ſhould have a Part cut off in the like Manner as the Stock, and a Slit made upward in this, ſo as to leave a Tongue, which Tongue ſhould be inſerted into the Slit of the Stock, obſerving to join their Rinds equally, that they may unite well together; then make a Ligature of Baſs, to keep them exactly in their Situation, and afterwards clay this Part of the Stock over well, to keep out the Air; in this Method of Grafting, the Cion is not ſeparated from the Tree, until it is firmly united with the Stock, nor is the Head of the Stock, or Branch, which is grafted, cut off, till this Time, and only Half the Wood pared off with a Slope, about three Inches in Length, and the ſame of the Cion, or Graft.

This Method of Grafting is not performed ſo early in the Seaſon, as the other, it being done in the Month of *April*, when the Sap is flowing, at which Time the Cion and Stock will join together, and unite much ſooner than at any other Seaſon.

The Walnut, Fig, and Mulberry, will take by this Method of Grafting, but none of them will ſucceed in any of the other Methods; there are alſo ſeveral Sorts of Evergreens, which may be propagated by this Method; but all the Trees which are grafted in this Way are weaker, and never grow to the Size of thoſe grafted in the other Methods, therefore this is rarely practiſed, but on ſuch Sorts of Trees as will not take by the other Methods.

The next Thing neceſſary to be known by thoſe who would practiſe this Art, is, what Trees will take and thrive by being grafted upon each other; and here there have been no ſure Directions given by any of the Writers on this Subject, for there will be found great Miſtakes in all their Books, in relation to this Matter; but as it would ſwell this Article too much, if all the Sorts of Trees were to be here enumerated, which will take upon each other by Grafting, I ſhall only mention ſuch general Directions, as, if attended to, will be ſufficient to inſtruct Perſons, ſo as they may ſucceed.

All ſuch Trees as are of the ſame Genus, *i. e.* which agree in their Flower and Fruit, will take upon each other;

other: For Inſtance, all the Nut-bearing Trees may be ſafely grafted on each other, as may all the Plum-bearing Trees, under which Head I reckon not only the ſeveral Sorts of Plums, but alſo the Almond, Peach, Nectarine, Apricock, &c. which agree exactly in their general Characters, by which they are diſtinguiſhed from all other Trees; but as many of theſe are very ſubject to emit large Quantities of Gum from the Parts of the Trees that are deeply cut and wounded, ſo the tender Trees of this Kind, moſt ſubject to this, *viz.* Peaches and Nectarines, are found to ſucceed beſt by Budding or Inoculation.

All Trees that bear Cones will do well upon each other, though they may differ in one being ever-green, and the other ſhedding its Leaves in Winter, as is obſervable in the Cedar of *Lebanus*, and the Larch Tree, which are found to ſucceed upon each other very well; but theſe muſt be grafted by Approach, for they abound with a great Quantity of Reſin, which is apt to evaporate from the Graft, if ſeparated from the Tree before it is joined with the Stock, whereby they are often deſtroyed, as alſo the Laurel on the Cherry, or the Cherry on the Laurel. All the Maſt-bearing Trees will take upon each other, and thoſe which have a tender ſoft Wood will do well if grafted in the common Way, but thoſe of a firmer Contexture, and ſlow Growth, ſhould be grafted by Approach.

By ſtrictly obſerving this Rule, we ſhall ſeldom miſcarry, provided the Operation be rightly performed, and at a proper Seaſon, unleſs the Weather ſhould prove very bad, as it ſometimes happens, whereby whole Quarters of Fruit Trees miſcarry; and it is by this Method that many Kinds of exotick Trees are not only propagated, but rendered hardy enough to endure the Cold of our Climate in the open Air; for, being grafted on Stocks of the ſame Sort which are hardy, the Grafts are rendered more capable to endure the Cold; as hath been experienced in moſt of our valuable Fruits now in *England*, which were formerly tranſplanted hither from more ſoutherly Climates, and were at firſt too impatient of our Cold to ſucceed well abroad, but have been, by Budding or Grafting upon more hardy Trees, rendered capable of reſiſting our ſevereſt Cold.

And theſe different Graftings ſeem to have been greatly in Uſe among the Ancients, though they were certainly miſtaken in the ſeveral Sorts of Fruits, which they mention to have ſucceeded upon each other, as the Fig upon the Mulberry, the Plum upon the Cheſtnut, with many others of the like Kind; moſt of which I have already tried, and find they will not ſucceed, therefore what has been advanced on this Head is not founded on Experience, or at leaſt they did not mean the ſame Plants which at preſent are called by thoſe Names; though I cannot help thinking we are apt to pay too much Deference to the Writings of the Ancients, in ſuppoſing them ſeldom to be miſtaken, or to aſſert a Falſhood; whereas, if their Works are carefully examined, it will be found, that they often copied from each others Writings, without making Experiments to prove the Truth of their Aſſertions: And it is well known, that the ranging of Plants before *Cæſalpinus*'s Time (which is but about 150 Years ſince) was, by their outward Appearance, or from the ſuppoſed Virtues of them; which Method is now juſtly exploded, and it hath been obſerved, from many repeated Trials, that however Plants may reſemble each other in the Shape and Make of their Leaves, Manner of Shooting, &c unleſs they agree in their Fruit, and their other diſtinctive Characters, they will not grow upon each other, though performed with ever ſo much Art.

GRAMEN. *Tourn. Inſt. R. H.* 516. *Tab.* 297. *Raii Meth. Plant.* 171. Graſs; in *French*, *Chien-dent*.

To enumerate all the Species of Graſs found growing naturally in *England*, would ſwell this Article greatly beyond the Deſign of the Work; therefore I ſhall only take Notice of a few Species, which are either uſed in Medicine, or cultivated for Uſe; for there is ſcarce a Paſture in this Country, where at leaſt twenty different Species are not to be found intermixed, and in moſt of them more than twice that Number. Theſe were, by the former Writers on Botany, all included under the common Denomination of *Gramen*, but were divided into different Sections. Mr. *Ray* has ranged them in the following Order, *Gramen triticum*, *i. e.* Wheat Graſs. *Gramen Secalinum*, *i. e.* Rye Graſs. *Gramen Loliaceum*, *i.e.* Darnel Graſs. *Gramen Paniceum*, *i. e.* Panick Graſs. *Gramen Phalaroides*, *i. e.* *Canary* Graſs. *Gramen Alopecuroides*, *i. e.* Foxtail Graſs. *Gramen Typhinum*, *i. e.* Cat's-tail Graſs. *Gramen Echinatum*, *i. e.* Hedgehog Graſs. *Gramen Criſtatum*, *i. e.* Creſted Graſs. *Gramen Avenacium*, *i. e.* Oat Graſs. *Gramen Dactylon*, *i. e.* Cocksfoot Graſs. *Gramen Arundinaceum*, *i. e.* Reed Graſs. *Gramen Miliaceum*, *i. e.* Millet Graſs. And under each of theſe Sections, there are many Species. And there are many others, which, by older Writers, were included under this general Title, ſome of which have no Relation to this Claſs; but there are others which are nearly allied to it, as the *Cyperus*, and *Cypreſs* Graſſes, &c. Theſe Dr. *Linnæus* has divided into Genera, but by his Method of claſſing them, he has ſeparated them to a great Diſtance from each other; for all thoſe whoſe Flowers have three Stamina, are ranged in his third Claſs; and others which have male and female Flowers, are removed to his twenty-firſt Claſs. However, it would have been much better to have kept them together, as Dr. *Van Royen* has done in the *Prodromus* of the *Leyden* Garden, under one general Title to the Claſs of *Graminea*.

As the ſeveral Genera under which the different Species of Graſs are ranged, have different Characters by which they are diſtinguiſhed, ſo it would be to little Purpoſe to give them all in this Work; and as there are no general Characteriſticks by which the whole Claſs can be known, ſo I ſhall not trouble the Reader with any of them here, but proceed to enumerate a few of the Species.

1. GRAMEN *ſpicâ triticeâ repens vulgare, caninum dictum. Raii Syn.* 2. p. 247. Common creeping Graſs with a Spike like Wheat, called Dog Graſs. *Triticum calycibus ſubulatis trifloris acuminatis. Lin. Sp. Pl.* Wheat with an Awl-ſhaped pointed Empalement including 3 Flowers, commonly called Couch, Couch Graſs, or Quick Graſs.

2. GRAMEN *loliaceum, anguſtiore folio & ſpicâ. C. B. P.*

Darnel Graſs, with a narrower Leaf and Spike. *Lolium ſpicâ muticâ. Lin. Sp. Pl.* 83. Darnel with a chaffy Spike, commonly called Ray, or Rye Graſs.

3. GRAMEN *pratenſe, paniculatum majus, anguſtiore folio. C. B. P.* 2. Meadow Graſs, with larger Panicles and a narrower Leaf. *Poa paniculâ diffuſâ, ſpiculis quadrifloris pubeſcentibus, culmo erecto tereti. Flor. Suec.* 77. *Poa* with a diffuſed Panicle, the ſmaller Spikes having 4 hairy Flowers, and a taper erect Straw.

4. GRAMEN *pratenſe, paniculatum majus, latiore folio. C. B. P.* 2. Meadow Graſs, with a larger Panicle and broader Leaf. *Poa panicula diffuſa ſpiculis trifloris glabris, culmo erecto tereti. Flor. Suec.* 76. *Poa* with a diffuſed Panicle, ſmall Spikes with 3 Flowers, and an upright Straw.

5. GRAMEN *avenacium pratenſe elatius, paniculâ flaveſcente, locuſtis parvis. Raii Syn.* 407. Taller Meadow Oat Graſs, with a yellowiſh Panicle and ſmall Huſks. *Avena paniculâ laxâ, calycibus trifloris brevibus, floſculis omnibus ariſtatis. Prod. Leyd.* 66. Oat Graſs with a looſe Panicle, three Flowers in each Empalement, which is ſhort, and all the Flowers having Awns.

6. GRAMEN *ſecalinum. Ger. Emac. Lib.* 1. *Cap.* 22. n. 4. Tall Meadow Rye Graſs.

7. GRAMEN *tremulum maximum. C. B. P.* 2. Greateſt quaking Graſs, or Cowquakes. *Briza ſpiculis cordatis, floſculis ſeptendecim. Hort. Cliff.* 23. *Briza* with Heart-ſhaped little Spikes, and 17 Flowers in each.

The 1ſt Sort of Graſs is that directed to be uſed in Medicine; the Roots of this are chiefly uſed, and are accounted aperitive and diuretick, opening Obſtructions of the Reins and Bladder, provoking Urine, and are of Service againſt the Gravel and Stone. The Juice of the Leaves and Stalks was greatly eſteemed by Dr. *Boerhaave*, who generally preſcribed this in all Caſes where he ſuppoſed there were any Obſtructions in the Bile Conduit.

This hath a creeping Root, which ſpreads far in the Ground, and is a very troubleſome Weed in Gardens and arable Land; for every ſmall Piece of the Root will grow and multiply exceedingly, ſo it is very difficult to extirpate where it once gets poſſeſſion: In Gardens, the common Method of deſtroying it is, to fork out the Roots as often as the Blades appear above Ground; where this is two or three Times carefully repeated, it may be totally rooted out; but when the Surface of the Ground is very full of the Roots, the ſhorteſt Way of deſtroying it, is to trench the Ground two Spits and a Shoveling deep, turning all the Couch into the Bottom, where it will rot, and never ſhoot up; but this can only be practiſed, where there is a ſufficient Depth of Soil, for in ſhallow Ground the Roots cannot be buried ſo deep, as to lie below the Depth to which they naturally ſhoot.

Where the Roots of this Graſs get Poſſeſſion in arable Fields, it is very difficult to root out again; the uſual Method is by laying the Land fallow in Summer, and frequently harrowing it well over to draw out the Roots; where this is carefully practiſed, the Ground may be ſo well cleaned in one Summer, as that the Roots cannot much injure the Crop which may be ſown upon it; but ſuch Land ſhould be cropped with ſuch Things as require the Horſe Hoeing Culture, for where the Land can be frequently ſtirred and harrowed afterward, it will be of great Service in cleaning it from the Roots of this Graſs and other bad Weeds. The Blade of this Graſs is ſo rough, that Cattle will not feed upon it.

The 2d Sort is frequently cultivated, eſpecially in ſtrong cold Land, upon which this Graſs will ſucceed better than any other Species, and is an earlier Feed in the Spring; but this is a very coarſe Graſs, and unleſs it is cut very early for Hay, it becomes hard and wiery in the Stalks, ſo that few Cattle care to eat it; for this Species has but few Leaves, running all to Stalk, ſo is uſually called *Bents*, and in ſome Counties *Bennet*; when this Graſs is fed, it will be proper to mow off the Bents in *June*, otherwiſe they will dry upon the Ground, and have the Appearance of a ſtubble Field all the latter Part of Summer; ſo that it will not only be very diſagreeable to the Sight, but alſo troubleſome to the Cattle that feed on it, by tickling their Noſtrils; ſo that the Want of better Paſture only, will force them to eat of the young Graſs which ſprings up between theſe Bents, for thoſe they will not touch; ſo that thoſe who ſuppoſe that theſe are eaten in Scarcity of Feed by the Cattle, are greatly miſtaken, for I have many Years cloſely attended to this, and have always found theſe Bents remaining on the Ground untouched, till the Froſt, Rain, and Winds, deſtroy it in Winter; and, by permitting theſe to ſtand, the after Growth of the Graſs is greatly retarded, and the beautiful Verdure is loſt for 3 or 4 Months; ſo that it is good Huſbandry to mow them before they grow too dry, and rake them off the Ground; if theſe are then made into Hay, it will ſerve for Cart Horſes Feed in Winter, and will pay the Expence of mowing it.

There is another Species of this Graſs called Red Darnel, of a worſe Nature than the firſt, the Stalks growing hard much ſooner, and having narrower Leaves: This is very common in moſt Paſture Grounds, for as it comes early to flower, ſo the Seeds are generally ripe before the Hay is cut, and from the falling Seeds the Ground is ſupplied with Plenty of this Sort; therefore thoſe deſirous to keep their Paſtures as clear from this Graſs as poſſible, ſhould always mow it before the Seeds are ripe.

This Graſs is uſually ſown with Clover, on ſuch Lands as are deſigned to be ploughed again in a few Years, and the common Method is to ſow it with Spring Corn; but from many repeated Trials, I have always found, that by ſowing theſe Seeds in *Auguſt*, when there has happened a few Showers to bring up the Graſs, that the Crop has anſwered much better than any which has been ſown in the common Way; for the Graſs has often been ſo rank, as to afford a good Feed the ſame Autumn; and the following Spring there has been a Ton and a Half of Hay *per* Acre mowed very early in the Seaſon, and this has been upon cold ſour Land; ſo that I am convinced it is the beſt Seaſon for ſowing theſe Graſſes, though it will be very difficult to perſuade thoſe Perſons to alter their Practice, who have been long wedded to old Cuſtoms. The Quantity of Seeds which I allow to an Acre is about two Buſhels, and eight Pounds of the common Clover, which, together, will make as good Plant upon the Ground as can be deſired; but this is not to be practiſed upon ſuch Lands where the Beauty of the Verdure is principally regarded, therefore is fit for thoſe who have only Profit in View.

The 3d and 4th Sorts are the two beſt Species of Graſs for Paſtures, ſo that if the Seeds of theſe were carefully collected and ſown ſeparately, without any other Mixture of Graſs Seeds, they would not only afford a greater Quantity of Feed on the ſame Space of Land, but the Graſs would be better, the Hay ſweeter, and the Verdure more laſting than of any other Sort; but there requires ſome Attention to the ſaving of theſe Seeds pure without Mixture. I have tried to ſave the Seeds of ſeveral Species of Graſs ſeparately, in order to determine their Qualities, but have found it very difficult to keep them diſtinct in Gardens where the Seeds of other Sorts of Graſs have been ſcattered; the only Method in which I could ſucceed, was by ſowing each Species in a diſtinct Pot, and when the Plants came up, to weed out all the other Kinds of Graſs which came up in the Pots; by this Means I preſerved a great Variety of the graſſy Tribe ſeveral Years, but not having Ground enough to propagate the moſt uſeful Species in any Quantity, I was obliged to abandon the Purſuit; but I muſt recommend this to Perſons of Leiſure and Skill, who have a ſufficient Quantity of Land for the Purpoſe, to carry this Project into Execution, which may be of ſingular Benefit to the Publick; for we have an Inſtance of the Advantage which the Inhabitants of the *Netherlands* have made, by ſaving the Seeds of the White Clover, or Honeyſuckle Trefoil, which is a Plant common to moſt of the *Engliſh* Paſtures, yet no Perſon in this Country ever gave themſelves the Trouble to collect the Seeds from the Fields for ſowing, but have purchaſed vaſt Quantities of this Seed annually, at a conſiderable Price from *Flanders*, where the Peaſants have been ſo induſtrious, as to collect the Seeds and ſow great Quantities of Land with it, with a View of Sale to this Country only. This is not an inconſiderable Article in Huſbandry, but deſerves the Attention of all thoſe, who, by Choice or otherwiſe, are engaged in the Buſineſs of Agriculture; for one Acre of Land will produce as much Seeds of this Species of Trefoil, as will ſell for 12 *l.* where it is a good Crop, and ſaved from the Spring Crop; and if the Graſs Seeds before-mentioned were ſeparately ſown, and carefully weeded from all other Species, and permitted to ſtand till their Seeds were ripe, it might be of equal Advantage with the other, eſpecially now, when every Gentleman is endeavouring to improve the Verdure near their Habitations.

The 5th and 6th Sorts are alſo very good Graſſes for Paſtures, and have perennial Roots, ſo are the next beſt Sorts for ſowing to thoſe before-mentioned, which, in my Opinion, deſerve the Preference to all the other; but as it will be difficult to ſave a ſufficient Quantity of Seeds of thoſe alone, to ſupply the Demand which may be for their Seeds; ſo theſe two Species may be admitted in Aid of the other, as they are very leafy Kinds of Graſs, and their Stalks do not become ſtiff and harſh like many other Species; but with proper Care may be made very fine, and, if duly rolled, their Roots will mat and form a very cloſe Sward, therefore theſe ſhould be included in the Number of ſown Graſſes.

The 7th Sort is mentioned for Variety, and not for Uſe; this hath an annual Root, which ſends up many broad hairy Leaves, between which ariſe ſlender ſtiff Stalks from a Foot to near two Feet high, dividing upward into a large looſe Panicle, garniſhed with Heart-ſhaped ſmall Spikes, each having about 17 ſmall Floſcules or Florets; theſe, after the Flowers are paſt, have a ſingle Seed ſucceeding them; the Heads hang by ſlender long Foot Stalks, which are moved by every Wind, ſo that they generally appear ſhaking, from whence it had the Title of Quaking Graſs. There are four Species of this Graſs, two of them grow naturally in *England*, and theſe Graſſes coming to Head in *May*, occaſioned the following *Engliſh* Proverb, *May come ſhe early come ſhe late, makes the Cow quake.* The large Sort here mentioned, grows naturally in the South of *France* and *Italy*, and is only preſerved in ſome *Engliſh* Gardens for Variety.

If the Seeds of this Sort are ſown in the Autumn, or permitted to ſcatter when ripe, the Plants will come up ſtronger, and flower much earlier, than when ſown in the Spring, ſo good Seeds may always be expected from them, which can ſeldom be attained from the Spring Plants in *England*; and as two or three Plants of this Sort will be full enough in a Garden for Variety, ſo theſe ſhould be allowed Room to ſpread; for where they grow at a Diſtance from each other, the Roots will ſend out a great Number of Stalks, which will be ſtronger, and produce much larger Panicles than thoſe which are too near together.

The Cocksfoot Graſs, Caponſtail Graſs, and Millet Graſſes, are too coarſe to deſerve Attention in *England*, though ſome of their Species are very uſeful in the warm Parts of *America*, where there is a great Scarcity of finer Graſs; and ſome of theſe are much better adapted to thoſe warm Countries, than any of our *European* Graſſes, for many of them lie flat on the Ground, and emit Roots from their Joints, ſo are well prepared for Heat; their Stalks are large and juicy, ſo will live in Heat where few of the *European* Graſſes can be made to thrive.

The Land on which Graſs Seed is intended to be ſown, ſhould be well ploughed, and cleared from the Roots of noxious Weeds, ſuch as Couch Graſs, Fern, Ruſhes, Heath, Gorſe, Broom, Reſt-harrow, *&c.* which, if left in the Ground, will ſoon get the better of the Graſs, and over-run the Land. Therefore in Places where either of theſe Weeds abound, it will be a good Method to plough up the Surface in *April*, and let it lie ſome Time to dry; then harrow the Roots into ſmall Heaps, and burn them. The Aſhes ſo produced, when ſpread on the Land, will be a good Manure for it. The Method of burning the Roots is particularly directed under the Article *Land*, which ſee: But where Couch Graſs, Fern, or Reſt-harrow, is in Plenty, whoſe Roots run far under Ground, the Land muſt be ploughed two or three Times pretty deep in dry Weather, and the Roots carefully harrowed off after each Ploughing, which is the moſt ſure Method to deſtroy them. Where the Land is very low, and of a ſtiff clayey Nature, which holds Water in Winter, it will be of ſingular Service to make ſome under Ground Drains to carry off the Wet; which, if detained too long on the Ground, will render the Graſs ſour. The Method of making theſe Drains is preſcribed under the Article *Land*, which ſee.

Before the Seed is ſown, the Surface of the Ground ſhould be made level and fine, otherwiſe the Seed will be buried unequally. When the Seed is ſown it muſt be gently harrowed in, and the Ground rolled with a wooden Roller, which will make the Surface even, and prevent the Seeds being blown in Patches. When the Graſs comes up, if there ſhould be any bare Spots, where the Seed has not grown, they may be ſown again, and the Ground rolled, which will fix the Seeds; and the firſt kindly Showers will bring up the Graſs, and make it very thick.

Where the Land is deſigned to continue in Paſture, it ſhould be ſown with the beſt Sorts of Graſs Seeds, and white *Dutch* Clover, or what is commonly called Honeyſuckle Graſs in many Parts of *England*, but there is a great Difficulty of procuring Hay Seeds which are good; for in all the good Paſtures near *London*, which abound with the beſt Sorts of Graſs, the Hay is commonly cut before the Seeds of the Graſs are ripe; ſo that thoſe Seeds which are procured from the Stables where the Horſes are fed with the beſt Sort of Hay, are little more than Chaff, or at beſt are only ſuch as are of the early Kinds of Graſs, with a great Quantity of Plantain and other Weeds; which has diſcouraged many Gentlemen from ſowing them, nor has any one attemted to ſave theſe Seeds properly, and as it requires longer Time, and more Attention, to ſave a Quantity of Seeds of the purer Sorts of Graſs than the Generality of People care to beſtow, ſo I would recommend the ſetting ſome of thoſe Upland Paſtures, which are cleaneſt from Weeds, and have the ſweeteſt Herbage, ſtand for Seeds; and although by ſo doing the Hay will be leſs valuable, yet from the Sale of the Seeds, it may anſwer better to the Poſſeſſor, than to mow it merely for the Hay; for any Gentleman who has Regard to the Beauty of his Land, had better give ſix Times the Price for ſuch Seeds, as is uſually paid for the ordinary Seeds, ſince the firſt Expence of Seeds is not to be put in Competition with the Beauty and Advantage of having ſuch as are good; for when the Land is brought to a good Sward (which may be done in one Year, where it is properly prepared and ſown with good Seeds) it may be kept in good Order, and by good Management improved annually, and will continue ſo, as long as proper Care is taken of it. I know ſome Land which was ſown in the Method hereafter directed above 40 Years ago, which are now as good Paſtures as any I have ſeen, and may be always continued ſo.

Theſe Grounds abounded with many bad Weeds, ſo they had a Winter and Summer's fallow, in which Time they were five Times ploughed and ten Times harrowed in order to deſtroy the Weeds, and make the Surface of the Ground fine; in *Auguſt* they were ſown with the beſt Graſs Seeds could be procured, three Buſhels of this, and nine Pounds of the white *Dutch* Clover Seeds were allowed to each Acre; as there happened Rains ſoon after the Seeds were ſown, ſo the Graſs came up well; but among it were a great Number of Weeds, which were drawn up and carried off the Ground, and in the Beginning of *October* the Fields were rolled with a Barley Roller; in the Spring the Fields were again weeded, and afterward rolled, and that Summer there was more than two Tons of Hay *per* Acre mowed off the Land; and by conſtant weeding twice a Year, ſweeping it with a Buſh Harrow, rolling and dreſſing of the Land, the Graſs has been greatly improved ſince, and is now as good Paſture as any in *England*; and ſince I have laid down great Quantities of Land in the ſame Manner, and with equal Succeſs, therefore from many Years Experience can recommend it, as the ſureſt Method of having good Paſtures.

But I know the Generality of Farmers will object to the firſt Loſs of their Crop, and alſo to the after Expence of weeding, rolling, *&c.* as too great for common Practice; however, I am well ſatiſfied from Experience, that whoever will be at the Expence, will find their Account in it; for the Crops of Hay will be ſo much better, and the after Paſture alſo, that it will more than pay the Expence, as from many exact Accounts, which have been kept of the whole, is ſufficiently demonſtrated, and the Verdure of theſe Paſtures is charming to all thoſe who have any Taſte of natural Beauties.

The proper Management of Paſture Land is the leaſt underſtood of any Part of Agriculture; the Farmers never have attended to this, being more inclined to the Plough; though the Profits attending that have not of late Years been ſo great, as to encourage them in that Part of Huſbandry; but theſe People never think of laying down Land for Paſture, to continue longer than three Years, at the End of which Time they plough it up again, to ſow it with Grain.

There is a Sort of ſtriped Graſs preſerved in many Gardens for the Beauty of its variegated Leaves, which continue freſh the greateſt Part of the Summer. This Sort is eaſily propagated by parting the Roots, either in Spring or Autumn, for every Offset will increaſe to be a large Root in one Year's Time. It will grow on any Soil, or in any Situation, therefore may be planted in any abject Part of the Garden, where it will thrive, and afford an agreeable Variety. This Sort is by many Perſons called Ribband Graſs, from the Stripes of white and green, which run the whole Length of the Blade, like the Stripes in ſome Ribbands.

For the further Management of Graſs in Fields, ſee *Paſture* and *Meadow*; and for that in Gardens, ſee *Graſs*.

Clover Graſs. *See* Trifolium.
Saint Foin. *See* Onobrychis.
La Lucerne. *See* Medica.
Noneſuch. *See* Melilotus.
Trefoil. *See* Trifolium.
Spurry. *See* Spergula.
GRANADILLA. *See* Paſſiflora.
GRAPES. *See* Vitis.

GRASS. The *Engliſh* Graſs is of ſo good a Quality for Walks or Graſs Plats, that if they be kept in good Order, they have that exquiſite Beauty that they cannot come up to in *France*, and ſeveral other Countries.

But green Walks and green Plats are, for the moſt Part, not made by ſowing the Graſs Seed, but by laying Turfs; and, indeed, the Turfs from a fine Common or Down, are much preferable to ſown Graſs.

In ſowing a fine green Plat, there is a Difficulty in getting good Seed; it ought not to be ſuch as is taken out of a Hay Loft without Diſtinction, for that Seed ſhooting too high and making large Stalks, the lower Part will be naked and bare; and although it be mowed ever ſo often, it will never make handſome Graſs; but, on the contrary, will come to nothing but Tufts of Weeds and Quick Graſs, very little better than that of the common Fields.

If Walks or Plats be made by ſowing, the beſt Way is to procure the Seed from thoſe Paſtures where the Graſs is naturally fine and clear, or elſe the Trouble of keeping it from ſpiry and benty Graſs will be very great, and it will ſcarce ever look handſome.

In order to ſow Graſs Seed, the Ground muſt be firſt dug or broken up with a Spade; and when it has been dreſſed and laid even, it muſt be very finely raked over, and all the Clods and Stones taken off, and covered over an Inch thick with good Mould, to facilitate the Growth of the Seed; this being done, the Seed is to be ſown pretty thick, that it may come up cloſe and ſhort; and it muſt be raked over again to bury and cover the Seed, that if the Weather ſhould happen to be windy, it may not be blown away.

As to the Seaſon of ſowing Graſs, the Middle or latter End of *Auguſt* is a good Time, becauſe the Seed naturally requires nothing but Moiſture to make it grow: If it be not ſown till the latter End of *February*, or the Beginning of *March*, if the Weather proves dry, it will not ſo ſoon make the Walks or Quarters green. It is alſo beſt to ſow it in a mild Day, inclining to Rain; for that, by ſinking down the Seed in the Earth, will cauſe it to ſhoot the ſooner. But where Graſs is ſown in Gardens, either for Lawns or Walks, there ſhould always be a good Quantity of the white Trefoil or *Dutch* Clover ſown with it, for this will make a fine Turf much ſooner than any other ſown Graſs, and will continue a better Verdure than any of the Graſs Tribe.

After the Seed is well come up, and the Graſs is very thick and of a beautiful green, it will require a conſtant Care to keep it in Order: This conſiſts in mowing the Graſs often, for the oftener it is mowed, the thicker and handſomer it grows; it muſt alſo be rolled with a Cylinder or Roller of Wood, to level it as much as poſſible.

If Graſs be neglected, it will run into Quick Graſs and Weeds; and if it does ſo, there is no Way to recover it, but either by ſowing it, or laying it over again, and that once in every two Years; but if the Ground be well cleared from the Roots of ſtrong Weeds, and the Turf be taken from a fine level Common, it will continue handſome for ſeveral Years, provided it be well kept.

In order to keep Graſs Plats or Walks handſome and in good Order, in Autumn you may ſow ſome freſh Seed over any Places that are not well filled, or where the Graſs is dead, to renew and furniſh them again; but there is nothing which improves Graſs ſo much as conſtant rolling and polling it, to deſtroy Wormcaſts, and thereby the Turf is rendered fine.

It is a general Practice when Turf is laid in Gardens, to cover the Surface of the Ground under the Turf, either with Sand, or very poor Earth; the Deſign of this is to keep the Graſs fine, by preventing its growing too rank. This is proper enough for very rich Ground, but is not ſo for ſuch Land as is but middling or poor; for when this is practiſed in ſuch Places, the Graſs will ſoon wear out, and decay in Patches.

When Turf is taken from a Common or Down, there ſhould be Regard had to the Cleanneſs of it, and not to take ſuch as is full of Weeds; for it will be a very tedious Piece of Work, to weed them out after the Turf is laid; and unleſs this is done, the Graſs will never appear handſome.

Where Turf is deſigned to remain for Years without renewing, there ſhould be Dreſſing laid upon it every other Year, either of very rotten Dung, Aſhes, or, where it can be eaſily procured, very rotten Tan, is a good Dreſſing for Graſs; but theſe Dreſſings ſhould be laid on early in Winter, that the Rain may waſh them into the Ground, before the Drought of the Spring comes on; otherwiſe they will occaſion the Graſs to burn, when the Warmth of Summer begins. Where Graſs is ſo dreſſed, and kept well rolled and mowed, it may be kept very beautiful for many Years; but where it is not dreſſed or fed with Sheep, it will rarely continue handſome more than eight or ten Years.

GRATIOLA. *Lin. Gen. Pl.* 27. *Raii Meth. Plant.* 90. *Digitalis. Tourn. Inſt. R. H.* 165. Hedge Hyſſop.

The *Characters* are,

The Flower hath a permanent Empalement, cut into 5 Parts; it hath 1 *Petal of the grinning Kind, with a Tube longer than the Empalement, cut at the Top into* 4 *ſmall Segments, the upper being broader and indented at the End where it is reflexed, the other* 3 *are erect and equal. It hath* 5 *Awl-ſhaped Stamina,* 3 *of which are ſhorter than the Petal, and ſteril; the other* 2 *are longer, and adhere to the Tube of the Petal; theſe are fruitful in male Duſt; they are terminated by roundiſh Summits. In the Center is ſituated a conical Germen, ſupporting an erect Style, crowned by a Stigma with two Lips, which cloſe after being fœcundated. The Germen becomes an oval Capſule ending in a Point, having two Cells filled with ſmall Seeds.*

The *Species* are,

1. GRATIOLA *floribus pedunculatis, foliis lanceolatis ſerratis. Lin. Mat. Med.* 18. Hedge Hyſſop with Flowers ſtanding on Foot Stalks, and Spear-ſhaped ſawed Leaves. *Digitalis minima Gratiola dicta. Mor. Hiſt.* 2. 479. Leaſt Foxglove, called *Gratiola.*

2. GRATIOLA *foliis lanceolatis obtuſis ſub dentatis. Flor. Virg.* 6. Hedge Hyſſop with obtuſe indented Leaves.

3. GRATIOLA *floribus ſubſeſſilibus. Lin. Sp. Pl.* 17. Hedge Hyſſop with Flowers ſitting cloſe to the Branches.

The 1ſt Sort grows naturally on the *Alps*, and other mountainous Parts of *Europe*. This hath a thick, fleſhy, fibrous, creeping Root, which propagates very much when planted in a proper Soil and Situation, from which ariſe ſeveral upright ſquare Stalks, near a Foot high, garniſhed with narrow Spear-ſhaped Leaves placed oppoſite; the Flowers are produced on the Side of the Stalks at each Joint, they are ſhaped like thoſe of the Foxglove, but are ſmall, and of a pale yellowiſh Colour. Theſe appear in *July*, but are ſeldom ſucceeded by Seeds in *England*.

It is eaſily propagated by parting the Roots; the beſt Time to do this is in Autumn, when the Stalks decay; the Plants ſhould have a moiſt Soil and a ſhady Situation, in which they will thrive exceedingly; but in dry Ground they often decay in Summer, unleſs plentifully watered.

This ſtands in the Liſt of medicinal Plants, but is very rarely uſed in *England*., though it is recommended by ſome good Writers as a Purger of ſerous and cholerick Humours.

The 2d Sort grows in *North America*, from whence I received the Seeds. This grows naturally in moiſt Places, where it riſes more than a Foot high, but in *England* I have not ſeen it more than eight Inches; the Leaves are blunt and indented at their Extremities; the Flowers are white, and come out from the Side of the Stalks, like thoſe of the other, but are not ſucceeded by Seeds here. It may be propagated as the firſt Sort, and requires the ſame Treatment.

The Seeds of the 3d Sort were ſent me from *Carthagena*, where it was found growing naturally in Places where there had been ſtanding Waters, which were then dried up; this Plant grew about 9 Inches high, with a weak Stalk, and the Leaves placed oppoſite; they were about three Quarters of an Inch long, and half an Inch broad, ſawed on their Edges; the Flowers came out ſingle on each Side the Stalk, they were white, and much ſmaller than thoſe of the firſt Sort, but were not ſucceeded by Seeds, ſo the Plant was loſt here.

GRAVEL and Graſs are naturally Ornaments to a Country Seat, and the Glory of the *Engliſh* Gardens, and Things in which we excel all other Nations, as *France*, *Holland*, *Flanders*, &c....

There are different Sorts of Gravel, but for thoſe who can conveniently have it, I approve of that Gravel on *Blackheath*, as preferable to moſt that we have in *England*; it conſiſting of ſmooth even Pebbles, which, when mixed with a due Quantity of Loam, will bind exceeding cloſe, and look very beautiful, and continue handſome longer than any other Sort of Gravel which I have yet ſeen.

Some recommend a Sort of Iron-mould Gravel, or Gravel with a little binding Loam amongſt it, than which nothing, they ſay, binds better when it is dry; but in wet Weather it is apt to ſtick to the Heels of one's Shoes, and will never appear handſome.

Sometimes Loam is mixed with Gravel that is over ſandy or ſharp, which muſt be very well blended together, and let lie in Heaps, after which it will bind like a Rock.

There are many Kinds of Gravel which do not bind, and thereby cauſe a continual Trouble of rolling, to little or no Purpoſe; as for ſuch,

If the Gravel be looſe, or ſandy, you ſhould take one Load of ſtrong Loam, to two or three of Gravel, and ſo caſt them well together, and turn this Mixture over three or four Times, that they may be well blended together; if this is done in proper Proportion, it will bind well, and not ſtick to the Feet in wet Weather.

There are many different Opinions about the Choice of Gravel; ſome are for having the Gravel as white as poſſible, and in order to make the Walks more ſo, they roll them well with Stone Rollers, which are often hewn by the Maſons, that they may add a Whiteneſs to the Walks; but this renders it very troubleſome to the Eyes, by reflecting the Rays of Light ſo ſtrongly, therefore this ſhould ever be avoided, and ſuch Gravel as will lie ſmooth, and reflect the leaſt, ſhould be prefered.

Some ſcreen the Gravel too fine, which is an Error; for if it be caſt into a round Heap, and the great Stones only raked off, it will be the better.

Some are apt to lay Gravel Walks too round, but this is likewiſe an Error, becauſe they are not ſo good to walk upon, and, beſides, it makes them look narrow; one Inch Riſe is enough in a Crown for a Walk of five Feet, and it will be ſufficient, if a Walk be ten Feet wide, that it lies two Inches higher in the Middle than it does on each Side; if fifteen Feet, three Inches; twenty Feet, four, and ſo in Proportion.

For the Depth of Gravel Walks, 6 or 8 Inches may do well enough, but a Foot Thickneſs will be ſufficient for any, but then there ſhould always be a Depth of Rubbiſh laid under the Gravel, eſpecially if the Ground is wet, in which Caſe there cannot be too much Care to fill the Bottom of the Walks with large Stones, Flints, Brick Rubbiſh, Chalk, or any other Materials which can be beſt procured, which will drain off the Moiſture from the Gravel, and prevent its being poachy in wet Weather; but as it may be difficult in ſome Places to procure a ſufficient Quantity of theſe Materials to lay in the Bottom of the Walks, ſo there may be a Bed of Heath, or Furze, which ever can be procured at the leaſt Expence, laid under the Gravel to keep it dry: and if either of theſe are uſed green, they will lie a long Time, as they will be covered from Air, and theſe will prevent the Gravel from getting down into the Clay, and will always keep the Gravel dry, and where there is not this Precaution in the firſt laying of Gravel upon Clay, the Water being detained by the Clay, will cauſe the Gravel to be poachy whenever there is much Rain.

In the making of Gravel Walks, there muſt be great Regard had to the Level of the Ground, ſo as to lay the Walks with eaſy Deſcents toward the low Parts of the Ground, that the Wet may be drained off eaſily, for when this is omitted, the Water will lie upon the Walks a conſiderable Time after hard Rains, which will render them unfit for Uſe, eſpecially where the Ground is naturally wet or ſtrong; but where the Ground is level, and there are no Declivities to carry off the Wet, it will be proper to have Sink Stones laid by the Sides of the Walks, at convenient Diſtances, to let off the Wet, and where the Ground is naturally dry, that the Water will ſoon ſoak away, the Drains from the Sink Stones may be contrived ſo as to convey the Water in Seſſpools, from which the Water will ſoak away in a ſhort Time; but in wet Land there ſhould be under-ground Drains, to convey the Wet off, either into Ponds, Ditches, or the neareſt Place to receive it, for where this is not well provided for, the Walks will never be ſo handſome or uſeful.

The Month of *March* is the propereſt Time for laying Gravel; it is not prudent to do it ſooner, or to lay Walks in any of the Winter Months before that Time.

Some indeed turn up Gravel Walks in Ridges in *December*, in order to kill the Weeds, but this is very wrong, for beſides that it deprives them of the Benefit of them all the Winter, it does not anſwer the End for which it is done, but rather the contrary; for though it does kill the Weeds for the preſent, yet it adds a Fertility to them, as to the great future Increaſe of both them and Graſs.

If conſtant rolling them after the Rains and Froſt will not effectually kill the Weeds and Moſs, you ſhould turn the Walks in *March*, and lay them down at the ſame Time.

In order to deſtroy Worms that ſpoil the Beauty of Gravel, or Graſs Walks, ſome recommend the watering them well with Water, in which Walnut Tree Leaves have been ſteeped, and made very bitter, eſpecially thoſe Places moſt annoyed with them, and this, they ſay, as ſoon as it reaches them, will make them come out haſtily, ſo that they may be gathered; but if, in the firſt laying of the Walks, there is a good Bed of Lime Rubbiſh laid in the Bottom, it is the moſt effectual Method to keep out the Worms, for they do not care to harbour near Lime.

GREEN-HOUSE, or Conſervatory.

As of late Years there have been great Quantities of curious exotick Plants introduced into the *Engliſh* Gardens, ſo the Number of Green-houſes, or Conſervatories, has increaſed, and not only a greater Skill in the Management and Ordering of theſe Plants has increaſed therewith, but alſo a greater Knowledge of the Structure and Contrivance of theſe Places, ſo as to render them both uſeful and ornamental, hath been acquired; and ſince there are many Particulars to be obſerved in the Conſtruction of theſe Houſes, whereby they will be greatly improved, I thought it neceſſary not only to give the beſt Inſtructions for this I was capable of, but alſo to give a Deſign of one in the Manner I would chooſe to erect it, upon the annexed Copper Plate.

As to the Length of theſe Houſes, that muſt be proportioned to the Number of Plants they are to contain, or the Fancy of the Owner, but their Depth ſhould never be greater than their Height in the Clear, which in ſmall, or middling Houſes, may be 16 or 18 Feet, but for large ones, from 20 to 24 Feet, is a good Proportion, for if the Green-houſe is long, and too narrow, it will have a bad Appearance both within and without, nor will it contain ſo many Plants, if proper Room be allowed for paſſing in Front, and on the Backſide of the Stands on which the Plants are placed; and, on the other Hand, if the Depth of the Green-houſe is more than 24 Feet, there muſt be more Rows of Plants placed to fill the Houſe, that can with Conveniency be reached in Watering and Cleaning, nor are Houſes of too great Depth ſo proper for keeping Plants, as thoſe of moderate Size.

The Windows in Front ſhould extend from about one Foot and a Half above the Pavement, to within the ſame Diſtance of the Cieling, which will admit of a Cornice round the Building, over the Heads of the Windows. As it is neceſſary to have theſe Windows ſo long, it will be impoſſible to make them in Proportion to their Breadth; for if in the largeſt Buildings the Saſhes are more than 7, or 7 Feet and a Half broad, they will be ſo heavy, and troubleſome to move up and down, as to render it very difficult for one Perſon to perform; beſides, their Weight will occaſion their ſoon decaying. There is alſo another Inconvenience in having the Windows too broad, which is, that of fixing proper Shutters to them, in ſuch a Manner, that they may fall back cloſe to the Piers, ſo as not to be incommodious, or, when open, to obſtruct any Part of the Rays of Light from reaching the Plants. The Piers between theſe Windows ſhould be as narrow as poſſible to ſupport the Building, for which Reaſon I ſhould chooſe to have them of Stone, or of hard well-burnt Bricks, for if they are built with fine rubbed Bricks, thoſe are generally ſo ſoft, that the Piers will require to be made thicker, and the Building will be in Danger of falling in a ſhort Time, eſpecially if you have any Rooms over the Green-houſe; which is what I would always adviſe, as being of great Uſe to keep the Froſt out in very hard Winters. If theſe Piers are made of Stone, I would adviſe them to be 2 Feet and a Half in Front, and ſloped off backward to about eighteen Inches broad, whereby the Rays of the Sun will not be taken off, or obſtructed by the Corners of the Piers, which it would be if they were ſquare; but if they are built with Bricks, it will be proper to make them 3 Feet in Front, otherwiſe they will be too weak to ſupport the Building; theſe I would alſo adviſe to be ſloped off in the Manner directed for the Stone.

At the Back of the Green-houſe there may be erected a Houſe for Tools, and many other Purpoſes, which will be extremely uſeful, and alſo prevent the Froſt from entering the Houſe that Way, ſo that the Wall between theſe need not be more than two Bricks and a Half in Thickneſs, whereas, were it quite expoſed behind, it ſhould be at leaſt three Bricks in Thickneſs; and by this Contrivance, if you are willing to make a handſome Building, and to have a noble Room over the Green-houſe, you may make the Room over the Tool Houſe, and carry up the Stair Caſe in the Back, ſo as not to be ſeen in the Green-houſe, and hereby you may have a Room 25, or 30 Feet in Width, and of a proportionable Length; and under this Stair Caſe there ſhould be a private Door into the Green-houſe, at which the Gardener may enter in hard froſty Weather, when it will not be ſafe to open any of the Glaſſes in the Front. The Floor of the Green-houſe, which ſhould be laid either with *Bremen* Squares, *Purbeck* Stone, or broad Tiles, according to the Fancy of the Owner, muſt be raiſed 2 Feet above the Surface of the Ground whereon the Houſe is placed, which, in dry Ground, will be ſufficient; but if the Situation be moiſt and ſpringy, and thereby ſubject to Damps, it ſhould be raiſed at leaſt 3 Feet above the Surface, and if the Whole is arched with low Brick Arches under the Floor, it will be of great Service in preventing the Damps riſing in Winter, which are often very hurtful to the Plants, eſpecially in great Thaws, when the Air is often too cold to be admitted into the Houſe, to take off the Damps. Under the Floor, about 2 Feet from the Front, I would adviſe a Flue of about 10 Inches in Width, and 2 Feet deep, to be carried the whole Length of the Houſe, which may be returned along the back Part, and be carried up in proper Funnels adjoining to the Tool Houſe, by which the Smoke may paſs off. The Fire Place may be contrived at one End of the Houſe, and the Door at which the Fuel is put in, as alſo the Aſh Grate, may be contrived to open into the Tool Houſe, ſo that it may be quite hid from the Sight, and be in the Dry, and the Fuel may be laid in the ſame Place, whereby it will always be ready for Uſe.

4H.

A. The Ground Plan of the Green-house.

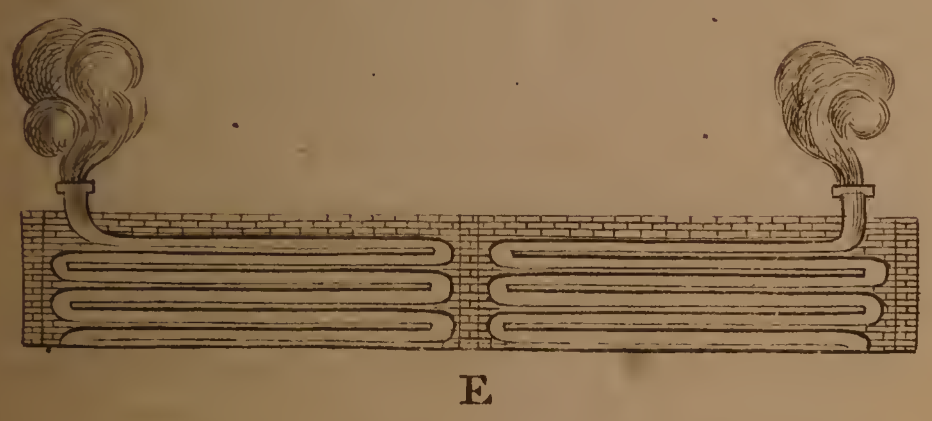
B.B. The Ground Plan of the two Stoves.

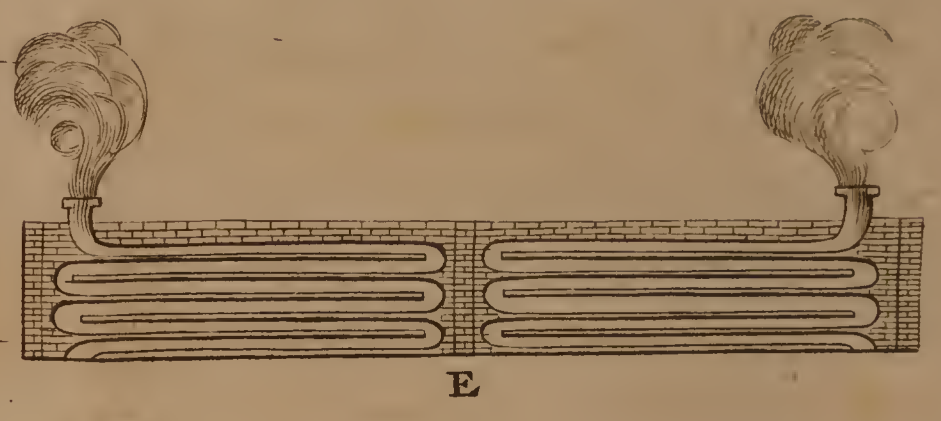
C.C.C. The Sheds behind the Green-houſe and Stoves.

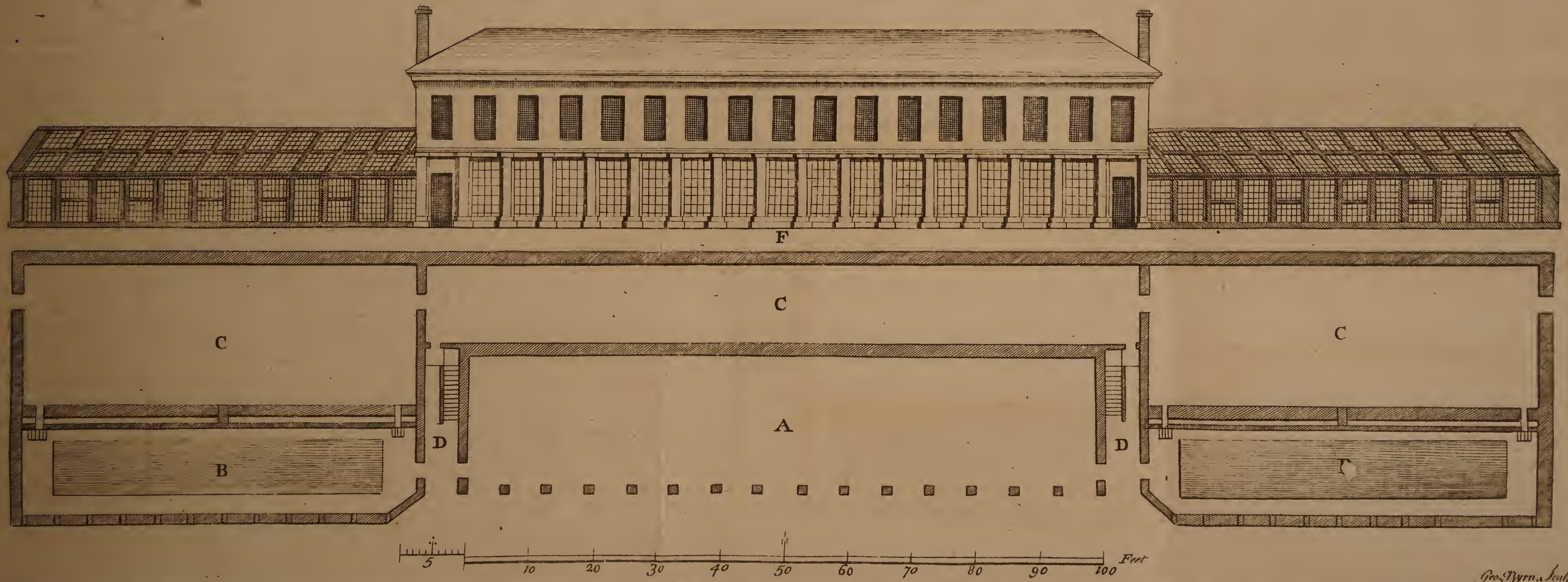
D.D. The paſsage of communication between the Green-houſe and Stoves, where the Stairs are placed which lead to the Rooms over the Green-houſe.

E.E. The Section of the Flues in the back of the Stoves.

F. The upright of the Green-house and Stoves.







Geo: Byrn. Sculp^{t}

I ſuppoſe many People will be ſurpriſed to ſee me direct the making Flues under a Green-houſe, which has been diſuſed ſo long, and by moſt People thought of ill Conſequence, as indeed they have often proved, when under the Direction of unſkilful Managers, who have thought it neceſſary, whenever the Weather was cold to make Fires therein; but however injurious Flues have been under ſuch Management, yet, when ſkilfully managed, they are of very great Service; for though, it may happen, that there will be no Neceſſity to make any Fires in them for two or three Years together, when the Winters prove mild, yet in very hard Winters they will be extremely uſeful to keep out the Froſt, which cannot be effected any other Way, but with great Trouble and Difficulty.

Withinſide the Windows, in Front of the Green-houſe, you ſhould have good ſtrong Shutters made with Hinges, to fold back, that they may fall back quite cloſe to the Piers, that the Rays of the Sun may not be obſtructed thereby. Theſe Shutters need not be above an Inch and a Half thick, or little more, when wrought, which, if made to join cloſe, will be ſufficient to keep out our common Froſt; and when the Weather is ſo cold as to endanger the freezing in the Houſe, it is but making a Fire in your Flue, which will effectually prevent it, and without this Conveniency it will be very troubleſome, as I have often ſeen, where Perſons have been obliged to nail Mats before their Windows, or to ſtuff the hollow Space between the Shutters and the Glaſs with Straw, which, when done, is commonly ſuffered to remain till the Froſt goes away, which if it ſhould continue very long, the keeping the Green-houſe cloſely ſhut up, will prove very injurious to the Plants; and as it frequently happens, that we have an Hour or two of the Sun-ſhine in the Middle of the Day, in continued Froſts, which is of great Service to Plants, when they can enjoy the Rays thereof through the Glaſſes, ſo, when there is nothing more to do than to open the Shutters, which may be performed in a very ſhort Time, and as ſoon ſhut again when the Sun is clouded, the Plants may have the Benefit thereof whenever it appears; whereas, where there is ſo much Trouble to uncover, and as much to cover again, it would take up the whole Time in uncovering and ſhutting them up, and thereby the Advantage of the Sun's Influence would be loſt. Beſides, where there is ſo much Trouble required to keep out the Froſt, it will be a great Chance if it be not neglected by the Gardener; for if he be not as fond of preſerving his Plants, and as much in love with them, as his Maſter, this Labour will be thought too great by him, and if he takes the Pains to cover the Glaſſes up with Mats, *&c.* he will not care to take them away again until the Weather alters, ſo that the Plants will be ſhut up cloſe during the whole Continuance of the Froſt.

There are ſome People who commonly make uſe of Pots filled with Charcoal to ſet in their Green-houſes in very ſevere Froſts, but this is very dangerous to the Perſons who attend theſe Fires, who I have often known almoſt ſuffocated therewith, and at the ſame Time they are very injurious to the Plants; nor is the Trouble of tending theſe ſmall, and the many Hazards to which the Uſe of theſe Fires is liable, have juſtly brought them into Diſuſe with all ſkilful Perſons, and as the Contrivances of Flues, and of the Fires, are but ſmall Charges, they are much to be preferred to any other Method for warming the Air of the Houſe.

The back Part of the Houſe ſhould be either laid over with Stucco, or plaſtered with Mortar, and white waſhed, for otherwiſe the Air in ſevere Froſt will penetrate through the Walls, eſpecially when the Froſt is attended with a ſtrong Wind, which is often the Caſe in moſt ſevere Winters. There are ſome Perſons who are at the Expence of wainſcoting their Green-houſes, but when this is done, it is proper to plaſter the Walls with Lime and Hair behind the Wainſcot, to keep out the Cold, and when they are lined with Wainſcot, they ſhould be painted white, as ſhould the Cieling, and every Part withinſide the Houſe; for this reflects the Rays of Light in a much greater Quantity than any other Colour, and is of ſignal Service to Plants, eſpecially in the Winter, when the Houſe is pretty much cloſed, and but a ſmall Share of Light is admitted through the Windows; for at ſuch Times I have obſerved, that in ſome Green-houſes which have been painted black, or of a dark Colour, the Plants have caſt moſt of their Leaves.

Where Green-houſes are built in ſuch Places as will not admit of Rooms over them, or the Perſon is unwilling to be at the Expence of ſuch Buildings, there muſt be Care taken to keep out the Froſt from entering through the Roof. To prevent which it will be very proper to have a Thickneſs of Reeds, Heath, or Furz, laid between the Cieling and the Tiles; in doing which there muſt be Care taken in framing the Joiſts, ſo as to ſupport theſe, that their Weight may not lie upon the Cieling, which might endanger it; for theſe ſhould be laid a Foot thick at leaſt, and as ſmooth as poſſible, and faſtened down well with Laths to prevent their riſing, and then covered over with a Coat of Lime and Hair, which will keep out the Air, and alſo prevent Mice, and other Vermin, from harbouring in them, which, if left uncovered, they would certainly do. For Want of this Precaution there are many Green-houſes built, which will not keep out the Froſt in hard Winters, and this is many Times attributed to the Glaſſes in Front admitting the Cold, when the Fault is in the Roof; for where there is only the Covering, either of Tiles, or Slates, and the Cieling, every ſevere Froſt will penetrate through them.

In this Green-houſe you ſhould have Truſſels, which may be moved out and into the Houſe, upon which you ſhould fix Rows of Planks, ſo as to place the Pots, or Tubs of Plants in regular Rows one above another, whereby the Heads of the Plants may be ſo ſituated, as not to interfere with each other. The loweſt Row of Plants, which ſhould be the forwardeſt towards the Windows, ſhould be placed about 4 Feet therefrom, that there may be a convenient Breadth left next the Glaſſes to walk in Front; and the Rows of Plants ſhould riſe gradually from the firſt, in ſuch a Manner, that the Heads of the ſecond Row ſhould be entirely advanced above the firſt, the Stems only being hid thereby; and at the back Side of the Houſe there ſhould be allowed a Space of at leaſt 5 Feet, for the Conveniency of watering the Plants, as alſo to admit of a

Current of Air round them, that the Damps occaſioned by the Perſpiration of the Plants, may be the better diſſipated, which by being pent in too cloſely, often occaſions a Mouldineſs upon the tender Shoots and Leaves, and when the Houſe is cloſe ſhut up, this ſtagnating rancid Vapour is often very deſtructive to the Plants; for which Reaſon alſo you ſhould never croud them too cloſe to each other, nor ſhould you ever place Sedums, Euphorbiums, Torch Thiſtles, and other tender ſucculent Plants, amongſt Oranges, Myrtles, and other ever-green Trees; for, by an Experiment which I made, *Anno* 1729, I found that a Sedum, placed in a Green-houſe among ſuch Trees, almoſt daily increaſed its Weight, although there was no Water given to it the whole Time; which Increaſe of Weight was owing to the Moiſture imbibed from the Air, which, being replete with the rancid Vapours perſpired from the other Plants, occaſioned the Leaves to grow pale, and in a ſhort Time they decayed, and dropped off; which I have often obſerved has been the Caſe with many other ſucculent Plants, when placed in thoſe Houſes which were filled with many Sorts of ever-green Trees, that required to be frequently watered.

Therefore, to avoid the Inconvenience which attends the placing Plants of very different Natures in the ſame Houſe, it will be very proper to have two Wings added to the main Green-houſe, which, if placed in the Manner expreſſed in the annexed Plan, will greatly add to the Beauty of the Building, and alſo collect a greater Share of Heat. In this Plan the Green-houſe is placed exactly fronting the South, and one of the Wings faces the South Eaſt, and the other the South Weſt; ſo that from the Time of the Sun's firſt Appearance upon any Part of the Building, until it goes off at Night, it is conſtantly reflected from one Part to the other, and the cold Winds are alſo kept off from the Front of the main Green-houſe hereby; and in the Area of this Place you may contrive to place many of the moſt tender exotick Plants, which will bear to be expoſed in the Summer Seaſon; and in the Spring, before the Weather will permit you to ſet out the Plants, the Beds and Borders of this Area may be full of Anemonies, Ranunculuſes, early Tulips, *&c.* which will be paſt flowering, and the Roots fit to take out of the Ground by the Time you carry out the Plants, which will render this Place very agreeable during the Spring Seaſon that the Flowers are blown, and here you may walk and divert yourſelf in a fine Day, when, perphaps, the Air in moſt other Parts of the Garden will be too cold for Perſons not much uſed thereto, to take Pleaſure in being out of the Houſe.

In the Centre of this Area may be contrived a ſmall Baſon for Water, which will be very convenient for watering Plants, and add much to the Beauty of the Place; beſides, the Water, thus ſituated, will be ſoftened by the Heat reflected from the Glaſſes upon it, whereby it will be rendered much better than raw cold Water for theſe tender Plants.

The two Wings of the Building ſhould be contrived ſo as to maintain Plants of different Degrees of Hardineſs, which muſt be effected by the Situation and Extent of the Fire-place, and the Manner of conducting the Flues, a particular Account of which will be exhibited under the Article *Stoves*. But I would here obſerve, that the Wing facing the South Eaſt ſhould always be preferred for the warmeſt Stove, its Situation being ſuch, that the Sun, on its firſt Appearance in the Morning, ſhines directly upon the Glaſſes, which is of great Service in warming the Air of the Houſe, and adding Life to the Plants, after having been ſhut up during the long Nights in the Winter Seaſon. Theſe Wings, being, in the Draught annexed, allowed 60 Feet in Length, may be divided in the Middle by Partitions of Glaſs, with Glaſs Doors to paſs from one to the other. To each of theſe there ſhould be a Fire Place, with Flues carried up againſt the back Wall, through which the Smoke ſhould be made to paſs, as many Times the Length of the Houſe, as the Height will admit of the Number of Flues; for the longer the Smoke is in paſſing, the more Heat will be given to the Houſe, with a leſs Quantity of Fuel, which is an Article worth Conſideration, eſpecially where Fuel is dear. By this Contrivance you may keep ſuch Plants as require the ſame Degree of Heat in one Part of the Houſe, and thoſe which will thrive in a much leſs Warmth in the other Part, but this will be more fully explained under the Article *Stoves*.

The other Wing of the Houſe, facing the South Weſt, may alſo be divided in the ſame Manner, and Flues carried through both Parts, which may be uſed according to the Seaſons, or the particular Sorts of Plants which are placed therein, ſo that here will be 4 Diviſions in the Wings, each of which may be kept up to a different Degree of Warmth, which, together with the Green-houſe, will be ſufficient to maintain Plants from all the ſeveral Countries of the World; and without having theſe ſeveral Degrees of Warmth, it will be impoſſible to preſerve the various Kinds of Plants from the ſeveral Parts of *Africa* and *America*, which are annually introduced into the *Engliſh* Gardens; for when Plants from different Countries are placed in the ſame Houſe, ſome are deſtroyed for Want of Heat, while others are forced and ſpoiled by too much of it, and this is often the Caſe in many Places, where there are large Collections of Plants.

In building theſe Wings, if there are not Sheds running behind them, their whole Length, the Walls ſhould not be leſs than three Bricks thick, and if they are more, it will be better, becauſe, where the Walls are thin, and expoſed to the open Air, the Cold will penetrate them, and when the Fires are made, the Heat will come out through the Walls, ſo that it will require a larger Quantity of Fuel, to maintain a proper Temperature of Warmth in the Houſe. The back Part of theſe Houſes, having ſloping Roofs, which are covered either with Tiles or Slates, ſhould alſo be lined with Reeds, *&c.* under the Covering, as is before directed for the Green-houſe, which will keep out the cold Air, and ſave a great Expence of Fuel; for the cloſer and better theſe Houſes are built, and the Glaſſes of the Slope, as alſo in Front, well guarded by Shutters, or Reeds, in hard Froſt, the leſs Fuel will be required to warm the Houſes, ſo that the firſt Expence in building theſe Houſes properly, will be the cheapeſt, when the after Expence of Fires is taken into Conſideration.

The ſloping Glaſſes of theſe Houſes ſhould be made to ſlide, and take off, ſo that they may be drawn down more or leſs, in warm Weather, to admit Air to the Plants, and the upright Glaſſes in Front may be ſo contrived, as that every other may open as Doors upon Hinges, and the alternate Glaſſes may be divided into two; the upper Part of each ſhould be contrived ſo as to be drawn down like Saſhes, ſo that either of theſe may be uſed to admit Air, in a greater or leſs Quantity, according as there may be Occaſion.

But beſides the Conſervatories here mentioned, it will be proper to have a deep hot Bed Frame, ſuch as is commonly uſed to raiſe large Annuals in the Spring, into which may be ſet Pots of ſuch Plants as come from *Carolina*, *Virginia*, &c. while the Plants are too ſmall to plant in the open Air, as alſo many other Sorts from *Spain*, &c. which require only to be ſcreened from the Violence of Froſts, and ſhould have as much free Air as poſſible in mild Weather, which can be no better effected than in one of theſe Frames, where the Glaſſes may be taken off every Day when the Weather will permit, and put on every Night; and in hard Froſts the Glaſſes may be covered with Mats, Straw, Peas Haulm, or the like, to prevent the Froſt from entering the Pots to freeze the Roots of the Plants, which is what will, many Times, utterly deſtroy them, though a ſlight Froſt pinching the Leaves, or Shoots, very ſeldom does them much Harm; if theſe are ſunk a Foot, or more, below the Surface of the Ground, they will be the better, provided the Ground is dry, otherwiſe they muſt be wholly above Ground; the Sides of this Frame ſhould be built with Brick, with a Curb of Wood laid round on the Top of the Wall, into which the Gutters, on which the Glaſſes ſlide, may be laid; the back Wall of this Frame may be 4 Feet high, and the Front one Foot and a Half; the Width about 6 Feet, and the Length in Proportion to the Number of Plants.

GREWIA. *Lin. Gen. Pl.* 914.

The *Characters* are,

The Flower has a thick leathery Empalement, compoſed of 5 Spear-ſhaped Leaves, which are coloured, and ſpread open. The Flower hath 5 Petals of the ſame Form, but ſmaller, and indented at their Baſe, where is ſituated a ſcaly Nectarium to each Petal, which is thick and incurved, inclining to the Border, to which the Style is fixed; it hath many Stamina, which are briſtly, and the Length of the Petals, terminated by roundiſh Summits. In the Center is ſituated the roundiſh Germen, which is lengthened to a Column, ſupporting a ſlender Style, crowned by a four-cornered obtuſe Stigma. The Germen afterward becomes a four-cornered Berry with 4 Cells, each incloſing one globular Seed.

The *Species* are,

1. GREWIA *foliis ſubovatis crenatis.* *Grewia* with oval crenated Leaves. *Ulmi facie arbuſcula Æthiopica, ramulis alatis, floribus purpuraſcentibus. Hort. Amſt.* 1. p. 165. *Tab.* 85. *Ethiopian* Shrub with the Appearance of Elm, winged Branches, and purpliſh Flowers.

2. GREWIA *foliis ovato-lanceolatis ſerratis.* *Grewia* with oval Spear-ſhaped Leaves, which are ſawed.

The 1ſt Sort has been long preſerved in many curious Gardens, both in *England* and *Holland*, and is figured by Dr. *Plukenet*, by the Title of *Ulmifolia arbor Africana baccifera, floribus purpureis*, but by Dr. *Boerhaave* it was ſuppoſed to be one of Father *Plumier's American* Plants, entitled, *Guidonia Ulmi foliis, flore roſeo*; but the Characters of this do not at all agree with thoſe of the *Guidonia*, that particular Species of the Genus being in the Royal Garden at *Paris*, which is extremely different from this. It grows naturally at the *Cape of Good Hope*, from whence I have received the Seeds, which have ſucceeded in the *Chelſea* Garden.

This will grow to the Height of 10 or 12 Feet, and has a Stem and Branches very like thoſe of the ſmall-leaved Elm, the Bark being ſmooth, and of the ſame Colour as that of Elm when young; the Leaves are alſo very like thoſe of the Elm, and fall off in Autumn; the Flowers are produced ſingly along the young Branches, from the Wings of the Leaves, which are of a bright purple Colour; theſe appear toward the End of *July*, and continue in *Auguſt*, and the Beginning of *September*, but are never ſucceeded by Fruit in this Country.

This may be propagated from Cuttings, or Layers; the Cuttings ſhould be taken off, and planted in *March*, before the Buds begin to ſwell, for they do not ſucceed well after; theſe Cuttings ſhould be planted in ſmall Pots filled with loamy Earth, and the Pots ſhould be plunged into a moderate hot Bed of Tanners Bark, where, if they are duly watered, and in the Middle of the Day ſhaded from the Sun, they will have taken good Root in about two Months, and may then be gradually inured to bear the open Air, into which they ſhould be removed in *June*, and placed in a ſheltered Situation, where they may remain till Autumn, when they muſt be removed into the Green-houſe; the beſt Time to lay down the Layers of this Plant is in the Spring, before the Buds come out, and theſe will be rooted by the ſame Time the following Year, when they may be cut off from the old Plants, and planted each into a ſeparate Pot filled with a ſoft loamy Soil.

The beſt Time to remove or tranſplant this Plant is, either in the Spring, juſt before the Buds begin to ſwell; or in Autumn, when the Leaves begin to drop; for in Summer, when the Plants are in full Leaf, it will be very improper to diſturb them.

In Winter theſe Plants ſhould be placed in the Green-houſe, for they are too tender to live abroad in *England*; but they ſhould have as much free Air as poſſible in mild Weather, for they only require to be protected from Froſt, and after their Leaves are fallen, they will require very moderate Watering, but in Summer they ſhould be conſtantly watered 3 or 4 Times a Week in dry Weather, and placed in a ſheltered Situation, with other hardy Green-houſe Plants, where they will add to the Variety.

The Seeds of the 2d Sort were ſent me by Monſ. *Ricard*, Gardener to the King of *France*, at *Marſeilles*, which were brought from *Senegal*, in *Africa*, by Monſ. *Adanſon*; this riſes in this Country with a ſhrubby Stalk, 5 or 6 Feet high, ſending out many lateral Branches, covered with a brown hairy Bark, and garniſhed with oval Spear-ſhaped Leaves, about 2 Inches long, and one Inch and a Quarter broad in the Middle, having ſeveral tranſverſe Veins from the Mid-rib to the Sides, where they are ſawed; theſe are placed alternately on the

Branches, having very ſhort Foot Stalks, and continue in Verdure through the Year; the Plants are young, ſo have not as yet flowered in *England*, therefore I can give no further Account of them.

This Sort is tender, ſo will not live through the Winter in *England*, unleſs it is placed in a warm Stove; nor do thoſe Plants thrive well, which are placed on Shelves in the dry Stove; therefore the only Method to have them ſucceed, is to place them in the Bark Bed in the Tan Stove, where the Plants have grown very well the two laſt Years. In Summer theſe Plants require a good Share of free Air to be admitted to them, and ſhould have Water 3 or 4 Times a Week in warm Weather; but in Winter they muſt be ſparingly watered, and require to be kept warm.

GRONOVIA. *Martyn. Gent.* 4. *Lin. Gen. Pl.* 248.

The *Characters* are,

The Flower hath a permanent Empalement of 1 *Leaf, cut to the Middle into* 5 *Parts, and is coloured. It hath* 5 *ſmall Petals fixed to the Cuts of the Empalement, and* 5 *hairy Stamina the Length of the Petals, inſerted into the Empalement, and placed alternate with the Petals, terminated by Twin Summits, which are erect. The Germen is ſituated under the Flower, ſupporting a ſlender Style longer than the Stamina, crowned by an obtuſe Stigma. The Germen becomes a roundiſh coloured Fruit with one Cell, incloſing one large roundiſh Seed.*

We know but one *Species* of this Genus, *viz.*

Gronovia. *Hort. Cliff.* 74. *Gronovia.* This is the *Gronovia ſcandens lappacea, pampinea fronde. Houſt.* Climbing Burry *Gronovia.*

This Plant was diſcovered by the late Dr. *Houſtoun* at *La Vera Cruz*, from whence he ſent the Seeds to *Europe*, which have ſucceeded in many Gardens. It is an annual Plant, which ſends forth many trailing Branches, like thoſe of the Cucumber, cloſely ſet with broad green Leaves, in Shape like thoſe of the Vine; but they are covered with ſmall Spines on both Sides, which ſting like the Nettle; the Branches have many Tendrils or Claſpers, by which they faſten themſelves to whatever Plants they grow near, and will riſe to the Height of 6 or 8 Feet; the Flowers are ſmall, and of a greeniſh yellow Colour, ſo make no great Appearance.

This being a very tender Plant, muſt be raiſed on a hot Bed early in the Spring, and afterward placed in the Bark Stove, and treated as the *Momordica*, with which Management it will produce ripe Seeds; but this, having neither Uſe or Beauty, is rarely cultivated but in Botanick Gardens, for Variety.

GROSSULARIA. *Raii Meth. Pl.* 145. *Tourn. Inſt. R. H.* 639. *Tab.* 409. *Ribes. Lin. Gen. Pl.* 247. Gooſeberry; in *French*, *Groſelier.*

The *Characters* are,

The Flower has a permanent Empalement of 1 *Leaf, cut into five Parts at the Top, which is ſwollen, concave, and coloured. It hath* 5 *ſmall, obtuſe, erect Petals, which riſe from the Border of the Empalement; it hath* 5 *Awl-ſhaped Stamina, inſerted into the Empalement, terminated by compreſſed proſtrate Summits. The Germen is ſituated below the Flower, having a bifid Style crowned by an obtuſe Stigma, and afterward becomes a globular Berry having a Navel, with one Cell filled with roundiſh compreſſed Seeds included in a Pulp.*

The *Species* are,

1. Grossularia *ramis recliuatis aculeatis, pedunculis triphyllis.* Gooſeberry with reclining Branches armed with Spines, and a three-leaved Foot Stalk. *Groſſularia ſpinoſa, fructu obſcurè purpuraſcente. J. B.* 1. 48. Prickly Gooſeberry with a dark purpliſh Fruit.

2. Grossularia *ramis aculeatis, baccis hirſutis.* Gooſeberry with prickly Branches and hairy Berries. *Groſſularia fructu maximo hiſpido margaritarum ferè colore. Raii Hiſt.* 1484. Gooſeberry with a very large rough Fruit, almoſt of a Pearl Colour.

3. Grossularia *ramis aculeatis, erectis, baccis glabris.* Gooſeberry with erect prickly Branches, and ſmooth Berries. *Groſſularia ſimplici acino, vel ſpinoſa ſylveſtris. C. B. P.* 455. Gooſeberry with a ſingle Fruit, or wild prickly Gooſeberry.

4. Grossularia *ramis undique aculeatis.* Gooſeberry whoſe Branches are armed on all Sides with Spines. *Groſſularia oxyacanthæ foliis amplioribus è ſinu Hudſonis. Pluk. Amalth.* 212. Gooſeberry with larger Hawthorn Leaves from *Hudſon*'s *Bay.*

5. Grossularia *aculeis ſubaxillaribus, baccis aculeatis racemoſis.* Gooſeberry with Spines on the lower Part of the Branches, and prickly Berries growing in Cluſters. *Ribes aculiis ſubaxillaribus, baccis aculeatis racemoſis. Lin. Sp. Pl.* 202. Currant with Spines on the lower Part of the Branches, and prickly Berries growing in Bunches.

The Sorts here enumerated, are ſuppoſed to be diſtinct Species, but there are ſeveral other Varieties which have been obtained from Seeds, and are propagated for Sale in the Nurſeries; moſt of theſe are titled from the Perſons who raiſed them, as *Lamb*'s Gooſeberry, *Hunt*'s Gooſeberry, *Edwards*'s Gooſeberry, &c. and as there are frequently new Varieties obtained, it is needleſs to enumerate them here, therefore I ſhall proceed to their Culture.

Theſe are propagated either by Suckers taken from the old Plants, or by Cuttings; the latter of which I prefer to the former, becauſe thoſe Plants produced from Suckers are always more diſpoſed to ſhoot out a greater Number of Suckers than thoſe raiſed from Cuttings, which generally form much better Roots.

The beſt Seaſon for planting theſe Cuttings is in Autumn, juſt before their Leaves begin to fall; obſerving always to take the handſomeſt Shoots, and from ſuch Branches as generally produce the greateſt Quantity of Fruit; for if you take thoſe which are produced from the Stem of the old Plants (which are commonly very luxuriant) they will not be near ſo fruitful as thoſe taken from bearing Branches: Theſe Cuttings ſhould be about 6 or 8 Inches long, and muſt be planted in a Border of light Earth, expoſed to the Morning Sun, about 3 Inches deep, obſerving to water them gently, when the Weather proves dry, to facilitate their taking Root; and in the Summer, when they have put out, you ſhould rub off all the under Shoots, leaving only the uppermoſt or ſtrongeſt, which ſhould be trained upright, to form a regular Stem. In *October* following, theſe Plants will be fit to remove; at which Time you ſhould prepare an open Spot of freſh Earth, which ſhould be well dug and cleanſed from all noxious Weeds, Roots, &c. and being levelled, you ſhould proceed to take up your

Plants, trimming their Roots, and cutting off all lateral Branches; then plant them at 3 Feet Diſtance Row from Row, and one Foot aſunder in the Rows, obſerving to place ſome ſhort Sticks to the Plants, in order to train their Stems upright and regular. In this Place they may remain one Year, being careful to keep them clear from Weeds, as alſo to trim off all lateral Shoots which are produced below the Head of the Plant, ſo that the Stem may be clear about a Foot in Height above the Surface of the Earth, which will be full enough; and as the Branches are produced commonly very irregular in the Head, you muſt cut out ſuch of them as croſs each other, or thin them where they are too cloſe, whereby the Head of the Plant will be open, and capable of admiting the Air freely into the Middle, which is of great Uſe to all Kinds of Fruits.

After theſe Plants have remained in this Nurſery one Year, they will be fit to tranſplant to the Places where they are deſigned to remain; for it is not ſo well to let them grow in the Nurſeries too large, which will occaſion their Roots to be woody, whereby the removing them will not only hazard the Growth of the Plants, but ſuch of them as may take very well, will remain ſtinted for two or three Years, before they will be able to recover their Check. The Soil in which theſe Plants thrive to the greateſt Advantage, is a rich light ſandy Earth, though they will do very well upon middling Soils, not too ſtrong or moiſt, and in all Situations; but where the Fruit is cultivated, to procure it in the greateſt Perfection, they ſhould never be planted in the Shade of other Trees, but muſt have a free open Expoſure. The Diſtance they ought to be planted is 8 Feet Row from Row, and 6 Feet aſunder in the Rows. The beſt Seaſon for tranſplanting them is in *October*, when their Leaves begin to decay; obſerving, as was before directed, to prune their Roots, and trim off all lateral Shoots, or ſuch as croſs each other, ſhortening all long Branches, ſo as to make the Head regular.

In pruning theſe Shrubs, moſt People make Uſe of Garden Sheers, obſerving only to cut the Head round, as is practiſed for Ever-greens, *&c.* whereby the Branches become ſo much crowded, that what Fruit is produced, never grows to half the Size it would do, were the Branches thinned, and pruned according to Art; which ſhould always be done with a Pruning Knife, ſhortening the ſtrong Shoots to about 10 Inches, and cutting out all thoſe which grow irregular, thinning the Fruit-bearing Branches where they are too thick, obſerving always to cut behind a Leaf Bud. With this Management your Fruit will be near twice as large as thoſe produced upon ſuch Buſhes as are not thus pruned, and the Shrubs will continue in Vigour much longer; but you muſt obſerve to keep the Ground clear from Weeds, and dig it at leaſt once a Year; and every other Year you ſhould beſtow a little rotten Dung upon it, which will greatly improve the Fruit.

It is a common Practice with the Gardeners near *London*, who have great Quantities of theſe Buſhes in order to ſupply the Markets, to prune them ſoon after *Michaelmas*, and then to dig up the Ground between the Rows, and plant it with Coleworts for Spring Uſe, whereby their Ground is employed all the Winter, without prejudicing the Gooſeberries; and in hard Winters theſe Coleworts often eſcape, when thoſe which are planted in an open Expoſure are all deſtroyed; and theſe are generally pulled up for Uſe in *February* or *March*, ſo that the Ground is clear before the Gooſeberries come out in the Spring; which is a Piece of Huſbandry well worth practiſing where Ground is dear, or where Perſons are confined for Room.

GROVES are the greateſt Ornaments to a Garden, nor can a Garden be complete which has not one or more of theſe. In ſmall Gardens there is ſcarce Room to admit of Groves of any Extent, yet in theſe there ſhould be at leaſt one contrived, which ſhould be as large as the Ground will allow it; and where theſe are ſmall, there is more Skill required in the Diſpoſition, to give them the Appearance of being larger than they really are.

Theſe Groves are not only great Ornaments to Gardens, but are alſo the greateſt Relief againſt the violent Heats of the Sun, affording Shade to walk under, in the hotteſt Part of the Day, when the other Parts of the Garden are uſeleſs; ſo that every Garden is defective which has not Shade.

Groves are of two Sorts, *viz.* open and cloſe Groves: Open Groves are ſuch as have large ſhady Trees, which ſtand at ſuch Diſtances, that their Branches may approach ſo near each other, as to prevent the Rays of the Sun from penetrating through them; but as ſuch Trees are a long Time in growing to a proper Size for affording a Shade, ſo where new Groves are planted, the Trees muſt be placed cloſer together, in order to have Shade as ſoon as poſſible; but in planting theſe Groves, it is much the beſt Way to diſpoſe all the Trees irregularly, which will give them a greater Magnificence, and alſo form a Shade ſooner, than when the Trees are planted in Lines; for when the Sun ſhines between the Rows of Trees, as it muſt do ſome Part of the Day in Summer, the Walks between them will be expoſed to the Heat, at ſuch Times, until the Branches of theſe Trees meet; whereas in the irregular Plantations, the Trees intervene, and obſtruct the direct Rays of the Sun.

When a Perſon who is to lay out a Garden, is ſo happy as to meet with large full grown Trees upon the Spot, they ſhould remain inviolate, if poſſible; for it will be better to put up with many Inconveniencies, than to deſtroy theſe, which will require an Age to retrieve; ſo that nothing but that of offending the Habitation, by being ſo near as to occaſion great Damps or obſtructing fine Views, ſhould tempt the cutting them down.

Moſt of the Groves which have been planted either in *England*, or in thoſe celebrated Gardens of *France*, are only a few regular Lines of Trees; many of which are Avenues to the Habitation, or lead to ſome Building, or other Object; but theſe do not appear ſo grand, as thoſe which have been made in Woods, where the Trees have grown accidentally, and at irregular Diſtances; where the Trees have large ſpreading Heads, and are left at ſuch Diſtance, as to permit the Graſs to grow under them, then they afford the greateſt Pleaſure: For nothing is more noble than fine ſpreading Trees, with large Stems, growing through Graſs, eſpecially if the Graſs is well kept, and has a good Verdure; beſides, moſt of theſe planted Groves have generally a Gravel

Walk, made in a ſtrait Line between them, which greatly offends the Sight of Perſons who have true Taſte; therefore whenever a Gravel Walk is abſolutely neceſſary to be carried through theſe Groves, it will be much better to twiſt it about, according as the Trees naturally ſtand, than to attempt Regularity; but dry Walks under large Trees are not ſo uſeful as in open Places, becauſe the dropping of the Trees will render theſe Walks uſeleſs after Rain, for a conſiderable Time.

Cloſe Groves have frequently large Trees ſtanding in them, but the Ground is filled under theſe with Shrubs, or under Wood; ſo that the Walks which are made in them are private, and ſcreened from Winds, whereby they are rendered agreeable for walking, at ſuch Times when the Air is too violent or cold for walking in the more expoſed Parts of the Garden.

Theſe are often contrived ſo as to bound the open Groves, and frequently to hide the Walls, or other Incloſures of the Garden; and when they are properly laid out, with dry Walks winding through them, and on the Sides of theſe ſweet-ſmelling Shrubs and Flowers irregularly planted, they have a charming Effect; for here a Perſon may walk in private, ſheltered from the Inclemency of cold or violent Winds, and enjoy the greateſt Sweets of the vegetable Kingdom: Therefore where it can be admitted, if they are continued round the whole Incloſure of the Garden, there will be a much greater Extent of Walk; and theſe Shrubs will appear the beſt Boundary, where there are not fine Proſpects to be gained.

Theſe cloſe Groves are by the *French* termed Boſquets, from the *Italian* Word *Boſquetto*, which ſignifies a little Wood; and in moſt of the *French* Gardens there are many of them planted; but theſe are reduced to regular Figures, as Ovals, Triangles, Squares, and Stars; but theſe have neither the Beauty or Uſe which thoſe have that are made irregularly, and whoſe Walks are not ſhut up on each Side by Hedges, which prevents the Eye from ſeeing the Quarters; and theſe want the Fragrancy of the Shrubs and Flowers, which are the great Delight of theſe private Walks; add to this, the keeping the Hedges in good Order is attended with a great Expence, which is a capital Thing to be conſidered in making Gardens.

GUAIBARA. *See* Coccolobis.

GUAJACANA. *See* Dioſpyros.

GUAJACUM. *Plum. Nov. Gen.* 39. *Tab.* 17. *Lin. Gen. Pl.* 465. *Lignum Vitæ*, or Pockwood.

The *Characters* are,

The Flower hath a concave Empalement of 1 *Leaf, which is quinquefid. It hath* 5 *oblong, oval, concave Petals, which are inſerted in the Empalement and ſpread open, and* 10 *erect Stamina inſerted in the Empalement, terminated by ſmall Summits. The Style is long and ſlender, the Germen oval and pointed, and the Stigma ſingle and ſlender. The Germen becomes a Berry which is roundiſh, with an oblique Point and deeply furrowed, incloſing an oval hard Seed.*

The *Species* are,

1. GUAJACUM *foliolis bijugatis obtuſis. Lin. Sp. Pl.* 381. *Guajacum* with obtuſe Lobes placed by Pairs. *Guajacum flore cæruleo, fructu ſubrotundo. Plum. Nov. Gen.* 391. *Guajacum* with a blue Flower and a roundiſh Fruit.

2. GUAJACUM *foliolis multijugatis obtuſis. Lin. Sp. Pl.* 382. *Guajacum* with many Pair of obtuſe Lobes. *Guajacum flore cæruleo fimbriato, fructu tetragono. Plum. Nov. Gen.* 391. *Guajacum* with a blue fringed Flower, and a four-cornered Fruit.

3. GUAJACUM *foliolis multijugatis acutis. Lin. Sp. Pl.* 382. *Guajacum* with many Pair of acute pointed Leaves. *Guilandinoides. Hort. Cliff.* 489. *Afra arbor acaciæ ſimilis, foliis myrti aculeatis ſplendentibus. Boerh. Ind. alt.* 2. p. 57. *African* Tree like the *Acacia*, with ſhining acute pointed Myrtle Leaves.

The 1ſt Sort is the common *Lignum Vitæ*, or *Guajacum*, uſed in Medicine; it grows naturally, in moſt of the Iſlands in the *Weſt-Indies*, where it riſes to a very large Tree, having a hard, brittle, browniſh Bark, not very thick; the Wood is firm, ſolid, and ponderous, appearing very reſinous, of a blackiſh yellow Colour in the Middle, and of a hot aromatick Taſte; the ſmaller Branches have an Aſh-coloured Bark, and are garniſhed with Leaves, divided by Pairs, each Pair having 2 Pair of ſmall oval blunt Leaves (or Pinnæ) of a ſtiff Conſiſtence, and a lucid green; the Flowers are produced in Cluſters at the End of the Branches, they are compoſed of 5 oval concave Petals, of a fine blue Colour; in the Center of theſe is fixed a Style with an oval Germen, crowned by a ſlender Stigma; and round this is ſituated a great Number of Stamina, as long as the Style, terminated by Sickle-ſhaped Summits. Dr. *Linnæus* ſuppoſes the Flowers to have but 10 Stamina, whereas they certainly have 20, ſo it ſhould be ranged in his twelfth Claſs of Plants; nor is it the Empalement, but the Germen which becomes the Fruit.

The Bark and Wood of this Tree are much of the ſame Nature, only the Wood is accounted hotter; they are uſed in Diet Drinks to purify and cleanſe the Blood, and to cauſe ſweating; they are eſteemed good for the Gout and Dropſy, the King's Evil, and particularly for the *French* Pox. The Gum or Reſin which is black, ſhining, and brittle, and, when powdered, of a greeniſh white Colour, of an aromatick Smell, and poignant Taſte, is ſomewhat cathartick, and a good Purge in rheumatick Caſes, to the Quantity of two Scruples mixed with the Yolk of an Egg, and given in a convenient Vehicle.

The Wood of this Tree is ſo hard as to break the Tools in felling them, ſo they are ſeldom cut down for Fire Wood, being difficult to burn; but the Wood is of great Uſe to the Sugar Planters, for making Wheels and Cogs for the Sugar Mills, &c. It is alſo frequently brought to *Europe*, and wrought into Bowls, and other Utenſils are made of the Wood.

This Tree can only be propagated by Seeds, which muſt be procured from the Countries where it naturally grows; theſe muſt be freſh, otherwiſe they will not grow; when they arrive, they ſhould be ſown in Pots filled with light Earth, and plunged into a good Bed: If the Seeds are good, and the Bed in which they are plunged is of a proper Temperature of Heat, the Plants will appear in 5 or 6 Weeks after, and in a Month or 6 Weeks will grow to be of Strength enough for tranſplanting,

planting; then they ſhould be carefully taken out of the Seed Pots, ſo as to preſerve their Roots as entire as poſſible, and each planted in a ſeparate ſmall Pot filled with light Earth, and plunged into a new hot Bed of Tanners Bark, where they muſt be ſhaded from the Sun till they have taken freſh Root; then they muſt be treated as other tender exotick Plants from warm Countries, admitting a large Share of free Air to them when the Weather is warm: They will require to be frequently refreſhed with Water in warm Weather, but it muſt be given them with Caution, for too much Wet will infallibly deſtroy them. While the Plants are young, they may be kept during the Summer Seaſon in a hot Bed of Tanners Bark under a Frame; but in the Autumn they muſt be removed into the Bark Stove, and plunged into the hot Bed of Tan, where they ſhould conſtantly remain, and muſt be treated as other tender Plants, being careful not to give them too much Water in the Winter, when it is very prejudicial to them, and in Summer they ſhould have a large Share of free Air admitted to them every Day. With this Treatment the Plants will thrive very well, but they are of ſlow Growth in their own Country, ſo cannot be expected to make great Progreſs in *Europe*.

The 2d Sort hath many ſmall Leaves placed along the Mid-rib by Pairs, which are rounded and obtuſe at their Ends, but narrow at their Baſe: They are of the ſame Conſiſtence with thoſe of the former Sort, but of a darker green Colour; the Flowers are produced in looſe Bunches toward the End of the Branches, which are of a fine blue Colour, and their Petals are fringed on their Edges. This is called in ſome of the Iſlands Baſtard *Lignum Vitæ*; I received it from *Antigua* by that Title. It requires the ſame Treatment as the firſt Sort, and is propagated by Seeds the ſame Way.

I have alſo received Specimens from the Iſland of *Barbuda* of one, which ſeems different from either of thoſe before-mentioned: The Branches have the ſame Appearance with thoſe of the firſt Sort, but the Leaves are larger and indented at their Extremities, and are placed all round the Branches, on very ſhort Foot Stalks; the Flowers were broken off, ſo I cannot determine the Difference between them, but by all Appearance they ſeem to be of the ſame Genus.

The 3d Sort has been long an Inhabitant in ſome of the curious Gardens in *England* and *Holland*, but ſeldom produces flowers in *Europe*. This grows naturally at the *Cape of Good Hope*, from whence the Seeds were brought firſt to *Holland*, where it paſſed for a Species of *Acacia*, until it produced its Flowers; which, by the Account given of them by the late Dr. *Boerhaave*, were of the Butterfly Kind; but whether Dr. *Linnæus* has ſeen the Flowers or not, I cannot ſay; however, he has removed it from that Claſs of Plants, and has added it to this Genus; and as I have not yet ſeen the Flowers, ſo I do not know if it is right placed. The Plants retain their Leaves all the Year, and will live in a good Green-houſe in Winter, but in Summer muſt be placed abroad with other Green-houſe Plants. It is of ſlow Growth, and is with Difficulty propagated by Layers.

GUAJAVA. *See* Pſidium.

GUANABANUS. *See* Annona.

GUAZUMA. *See* Theobroma.

GUIDONIA. *See* Samyda.

GUILANDINA. *Lin. Gen. Pl.* 464. *Bonduc. Plum. Nov. Gen.* 25. *Tab.* 39. The Nickar Tree.

The *Characters* are,

The Empalement of the Flower is of 1 *Leaf, is Bell-ſhaped, and cut at the Rim into* 5 *equal Parts; the Flower has* 5 *concave Spear-ſhaped Petals which are equal, and ſit cloſe to the Empalement, into which they are inſerted. It hath* 10 *Awl-ſhaped Stamina which are erect, and inſerted in the Empalement, being alternately ſhorter than each other, and terminated by obtuſe Summits. In the Center is ſituated an oblong Germen, ſupporting a ſlender Style the Length of the Stamina, crowned by a ſingle Stigma. The Germen becomes a rhomboid Pod, with a convex Suture on the upper Side; it is ſwelling and compreſſed, having one Cell, including oval hard Seeds ſeparated by Partitions.*

The *Species* are,

1. GUILANDINA *aculeata, foliis bipinnatis, foliolis ovatis oppoſitis integerrimis.* Prickly *Guilandina* with double winged Leaves, whoſe Lobes are oval, oppoſite, and entire. *Bonduc vulgare majus polyphyllum. Plum. Nov. Gen.* 25. Common greater *Bonduc*, having many Leaves called yellow Nickar.

2. GUILANDINA *aculeata, foliolis ovalibus oppoſitis ſeſſilibus.* Prickly *Guilandina* with oval ſmall Leaves placed oppoſite, and ſitting cloſe. *Bonduc vulgare minus polyphyllum. Plum. Nov. Gen.* 25. Smaller common *Bonduc*, or Nickar Tree having many Leaves, called grey Nickar.

3. GUILANDINA *inermis foliis bipinnatis, foliolis ovatis acutis alternis.* Smooth *Guilandina* with double winged Leaves, whoſe ſmall Leaves are oval, pointed, and alternate.

4. GUILANDINA *inermis, foliis ſubpinnatis, foliolis inferioribus ternatis. Flor. Zeyl.* 155. Smooth *Guilandina* with winged Leaves, whoſe under ſmall Leaves are trifoliate. *Moringha Zeylanica, foliorum pinnis pinnatis, flore majore, fructu anguloſo. Burm. Zeyl.* 162. *Tab.* 75. *Morunga* of *Ceylon*, with double winged Leaves, a larger Flower, and an angular Fruit.

5. GUILANDINA *inermis foliis bipinnatis, foliolis ovato-lanceolatis alternis. Guilandina* with ſmooth Branches, doubly winged Leaves, and the ſmall Leaves oval, Spear-ſhaped, and placed alternate. *Bonduc Canadenſe polyphyllum, non ſpinoſum, mas & fœmina. Du Hamel. Canada* Nickar Tree having many Leaves, which have no Spines, and are male and female.

The 1ſt and 2d Sorts grow naturally in moſt of the Iſlands in the *Weſt-Indies*, where they twine their Stalks about any neighbouring Support, and riſe to the Height of 12 or 14 Feet. The Leaves of the firſt Sort are near a Foot and a Half long, and compoſed of 6 or 7 Pair of Pinnæ, or Wings, each of which has as many Pair of Lobes, or ſmall Leaves ſet along the Mid-rib; theſe are oval and entire; the Foot Stalk or principal Mid-rib of the Leaf, is armed with ſhort crooked Thorns placed irregularly; the Stalks are alſo cloſely armed with the like Thorns, which are larger. The Stalks at firſt grow erect, but afterward twine about the neighbouring Trees or Shrubs, being too weak to ſtand without Support: The Flowers come out in long Spikes from the Wings of the Stalk; they are compoſed of 5 concave yellow Petals, which are equal; in the Center is ſituated the oblong Germen, ſurrounded by 10 Stamina. After the Flower is paſt, the Germen becomes a broad thick Pod, about 3 Inches long and 2 broad, cloſely armed with ſlender Spines, opening with 2 Valves, each incloſing two hard Seeds about the Size of Children's Marbles, of a yellowiſh Colour.

The 2d Sort differs from the firſt, in having much ſmaller Leaves, which are ſet cloſer together; and below each Pair of Lobes are ſituated two ſhort ſtiff crooked Spines, placed oppoſite; the Flowers are of a deeper yellow Colour than thoſe of the firſt Sort, and the Seeds are of an Aſh Colour.

The 3d Sort was diſcovered by the late Dr. *Houſtoun* at *Campeachy*, from whence he ſent the dried Samples to *England*, but there was no Fruit on the Trees at the Time when he was there, but he mentions that this Sort had an upright Stem, of a large Size, dividing into many Branches; theſe are garniſhed with double winged Leaves, which are ſmooth; the Wings come out oppoſite, each Leaf being compoſed of four Pair, but the Lobes are placed alternate on the middle Rib; they are oval, but end in a Point, and are of a light green Colour.

The 4th Sort grows naturally in the Iſland of *Ceylon*, and in ſeveral Places on the *Malabar* Coaſt, from whence the Seeds were brought to *England*. This in its native Country, riſes to the Height of 25 or 30 Feet, with a ſtrong Stem, covered with a ſmooth Bark, which in the young Branches is green, but on the older is of an Aſh Colour; the Root grows knobbed, and very thick. This, when young, is ſcraped and uſed by the Inhabitants as Horſe Raddiſh is in *Europe*, having much the ſame ſharp Taſte; the Branches are garniſhed with decompound winged Leaves; thoſe which are ſituated at the Baſe, have but 3 Leaves, but above the Leaves are branched out into ſeveral Diviſions, which are again divided into ſmaller, which have 5 or 6 Pair of oval Lobes, terminated by an odd one; they are of a light green, and a little hoary on their under Side. The Flowers are produced in looſe Bunches from the Side of the Branches; they are compoſed of an unequal Number of Petals, from 5 to 10; they have 10 ſhort Stamina ſurrounding the Germen, which afterward turns to a long taper Pod, including ſeveral angular Seeds, covered with a thin Membrane. Theſe have a Flavour like the Root.

Theſe 4 Sorts are Natives of warm Countries, ſo will not live through the Winter in *England*, unleſs placed in a warm Stove, and the Pots plunged into the Tan Bed. They are propagated by Seeds, but thoſe of the two firſt Sorts are ſo hard, that unleſs they are ſoaked 2 or 3 Days in Water before they are put into the Ground, or placed under the Pots in the Tan Bed to ſoften their Covers, they will remain Years in the Ground without vegetating; when the Plants come up, they will be fit to tranſplant in a ſhort Time; then they ſhould be each tranſplanted into a ſmall Pot filled with light freſh Earth, and plunged into a moderate hot Bed of Tanners Bark, ſhading them till they have taken freſh Root; then they muſt be treated as other tender exotick Plants, giving them a large Share of Air in warm Weather, and but little Water; and when the Plants have advanced to be too tall to remain in the Frames, they muſt be removed into the Bark Stove and plunged into the hot Bed, where they will make great Progreſs, provided they have not too much Water, eſpecially during the Winter Seaſon, for theſe Plants are very impatient of Moiſture in cold Weather.

The 4th Sort requires the ſame Treatment as thoſe before-mentioned, but the Seeds will grow without being ſteeped in Water; and the Plants are with Difficulty ſhifted from one Pot to another, for their Roots are large, fleſhy, and have but few Fibres; ſo that unleſs great Care is taken, all the Earth will fall away from them, which often cauſes their Stalks to decay almoſt to the Root, and ſometimes occaſions the Loſs of the Plants. This Plant muſt be ſparingly watered at all Times, but particularly in cold Weather, when Moiſture will cauſe them to rot in a ſhort Time.

The 5th Sort grows naturally in *Canada*, from whence the Plants were brought to *Paris*, where it has been ſome Years cultivated; but within 8 Years paſt, it was firſt brought to *England*. This, in the Country where it naturally grows, riſes with an erect Stem to the Height of 30 Feet or more, dividing into many Branches, covered with a bluiſh Aſh-coloured Bark very ſmooth, and garniſhed with large decompounded winged Leaves of the oval Shape, very ſmooth and entire, but ranged alternate on the Mid-rib; theſe fall off in the Autumn, and new ones come out late in the Spring.

There are male and female of this Sort in different Plants; as theſe have not as yet flowered in any of the *Engliſh* Gardens, ſo I can give no farther Account of it, nor of the Fruit, having never ſeen any of them. This Sort lives abroad in the open Air, and is never hurt by Froſt. It is only propagated by cutting off ſome of the Roots, which cauſe them to ſhoot upward, ſo may be taken from the old Root, and multiplied. It requires a light Soil, not too moiſt.

GUNDELIA. *Tourn. Cor.* 51. *Tab.* 486. *Lin. Gen. Pl.* 828. *Hacub. Vaill. Ac. Reg. Scien.* 1718.

The *Characters* are,

It hath an uniform tubulous Flower, compoſed of many hermaphrodite Florets, incircled by Leaves. They have but 1 *Petal which is cloſed at the Bottom, but ſwells at the Top, where it is ſlightly cut into* 5 *Parts: They have* 5 *ſhort hairy Stamina, terminated by long cylindrical Summits. The oval Germen is ſituated at the Bottom of the Flower, crowned by ſmall Scales, ſupporting a ſlender Style longer than the Petal, terminated by* 2 *revolving Stigmas. The Germen becomes a roundiſh ſingle Seed incloſed in the common Receptacle, which is conical, and the Seeds are ſeparated by a chaffy Down.*

We have but one *Species* of this Genus at preſent in *England*, *viz.*

GUNDELIA. *Lin. Sp. Pl.* 814. There is no *Engliſh* Title to this Plant, but there are two Varieties of it mentioned by *Tournefort*, which are ſuppoſed to ariſe from the ſame Seeds, as they were found growing promiſcuouſly together. Theſe are,

1. GUNDELIA *Orientalis, acanthi aculeati foliis, floribus intenſe purpureis, capite araneoſâ lanugine obſito. Tourn. Cor.* 51. Eaſtern *Gundelia* with prickly Bearſbreech Leaves, deep purple Flowers, and a Head covered with a Down like a Cobweb.

2. GUNDELIA *Orientalis, acanthi aculeati folio, capite glabro. Tourn. Cor.* 51. Eaſtern *Gundelia*, with a prickly Bearſbreech Leaf, and a ſmooth Head.

This Plant was diſcovered by Dr. *Gundelſcheimer*, in Company with *Tournefort*, near *Baibout* in *Armenia*, but has ſince been found growing naturally in ſeveral Places in the *Levant*, where it is generally found in dry ſtrong Land. The Stalks of this Plant ſeldom riſe more than a Foot high, the under Leaves are long, narrow, and ſawed on their Edges, their Teeth ending in a Spine; the other Leaves are broader, irregularly ſlaſhed to the Mid-rib, and armed at the Points with ſharp Prickles; the Stalks divide upward into ſeveral Branches, armed with Leaves of the ſame Form, but narrower; and each is terminated by a conical Head of Flowers, reſembling thoſe of Fuller's Thiſtle, being ſurrounded at the Baſe by a Circle of long narrow prickly Leaves: Theſe Heads are compoſed of many hermaphrodite Florets, ſhut up in the Scales, each having a Germen with 5 Stamina ſurrounding it; but there are few of the Seeds which ripen perfectly in each Head in the natural Places of its Growth, and in *England* they have not as yet produced any good Seeds; for if Rain happens at the Time when the Plants are in flower, the Germen periſhes, which is the Caſe with ſeveral other of thoſe Plants whoſe Flowers are collected into Heads.

Theſe Plants are propagated by Seed, which ſhould be ſown the Beginning of *March*, in a warm dry Border of freſh, but lean Earth, in the Place where the Plants are deſigned to remain. When the Plants come up, they muſt be carefully cleared from Weeds; as they grow large, they ſhould be thinned, leaving the Plants which are deſigned to remain, about 2 Feet aſunder, that they may have Room to ſpread. After this there is no other Culture required, but to keep them clear from Weeds; and if the Froſt ſhould prove ſevere in Winter, the Plants muſt be covered with Straw or Peas Haulm to protect them, but this Covering muſt be taken off in mild Weather; in 2 Years they will produce their Flowers, when they will make a fine Appearance amongſt other hardy Plants in the Pleaſure Garden. They flower in *July*, and the Plants generally decay the following Autumn, ſo that freſh Seeds muſt be annually procured from Abroad.

GYPSOPHYLA. *Lin. Gen. Pl.* 498. We have no *Engliſh* Title for this Genus.

The *Characters* are,

The Flower hath a permanent, angular, Bell-ſhaped Empalement, cut into 5 *Parts at the Top. It hath* 5 *oval blunt Petals, which ſpread open, and* 10 *Awl-ſhaped Stamina, terminated by roundiſh Summits. In the Center is ſituated a globular Germen, ſupporting* 2 *ſlender Styles, crowned by ſingle Stigmas. The Germen afterward becomes a globular Capſule with one Cell, opening with* 5 *Valves, filled with ſmall roundiſh Seeds.*

The *Species* are,

1. GYPSOPHYLA *foliis mucronatis recurvatis, floribus aggregatis. Lin. Sp. Pl.* 406. *Gypſophyla* with pointed recurved Leaves, and Flowers gathered in a Head. *Lychnis Hiſpanica kali folio, multiflora. Tourn. Inſt. R. H.* 338. *Spaniſh Lychnis* with a Glaſſwort Leaf and many Flowers.

2. GYPSOPHYLA *foliis lanceolato-linearibus, obſoletè triquetris lævibus obtuſis ſecundis. Lin. Sp. Pl.* 407. *Gypſophyla* with narrow Spear-ſhaped Leaves, having 3 blunt Angles, and ſmooth obtuſe Leaves in Cluſters. *Saponaria caule ſimplici, foliis linearibus ex alis foliorum confertis teretibus. Hort. Cliff.* 166. Sopewort with a ſingle Stalk, very narrow Leaves, coming out in Cluſters from the Wings of the Stalks.

3. GYPSOPHYLA *foliis lanceolatis lævibus, caulibus diffuſis, piſtillis corollâ campanulatâ longioribus. Lin. Sp. Pl. App.* 1195. *Gypſophyla* with ſmooth Spear-ſhaped Leaves, diffuſed Stalks, and the Pointal longer than the Petal, which is Bell-ſhaped.

4. GYPSOPHYLA *foliis ovato-lanceolatis, ſemiamplexicaulibus. Lin. Sp. Pl.* 408. *Gypſophyla* with oval Spear-ſhaped Leaves, half embracing the Stalks. *Lychnis Orientalis, ſaponariæ folio & facie, flore parvo & multiplici. Tourn. Cor.* 24. Eaſten *Lychnis* with the Leaf and Appearance of Sopewort, having many ſmall Flowers.

5. GYPSOPHYLA *foliis lanceolatis ſcabris, corollis revolutis. Lin. Sp. Pl.* 407. *Gypſophyla* with rough Spear-ſhaped Leaves, and the Petals of the Flowers recurved. *Alſine fruteſcens caryophylli folio, flore parvo albo. Gerb.* Shrubby Chickweed, with a Clove Gilliflower Leaf, and a ſmall white Flower.

The 1ſt Sort grows naturally in the South of *France* in *Spain*, and *Italy*, upon the Mountains. This hath a perennial Root, from which ariſe many narrow Leaves ending in acute Points, which are recurved; the Stalks riſe about a Foot high, garniſhed with narrower Leaves placed oppoſite, and at ſome of the Joints there are ſmaller Leaves growing from the Stalks in Cluſters; the upper Part of the Stalk divides into ſmaller Branches, each being terminated by a cloſe Bunch of ſmall white Flowers. Theſe appear in *July*, and are ſucceeded by ſmall oval Capſules, filled with ſmall Seeds.

The 2d Sort is ſomewhat like the firſt, but the Leaves are much narrower, and almoſt 3 cornered; they are placed in Cluſters, which come out from the Side of the Stalk; the Bunches of Flowers are ſmaller, and not ſo cloſely joined. This hath a perennial Root, and grows naturally upon the *Helvetian* Mountains.

The 3d Sort hath a perennial Root, from which ariſe ſmooth Spear-ſhaped Leaves in Cluſters; the Stalks are near a Foot long, but are proſtrate near the Ground; the Flowers have a purpliſh Caſt, and the Stamina are much longer than the Petals of the Flowers. This flowers in *June* and *July*, and the Seeds ripen in Autumn.

The 4th Sort grows naturally in the *Levant*, and alſo in *Spain*. It hath a ſtrong, fleſhy, fibrous Root, which ſtrikes deep in the Ground, ſending up ſeveral thick, fleſhy Stalks, which riſe near 2 Feet high, and are garniſhed with oval Spear-ſhaped Leaves, which half embrace the Stalks with their Baſe; the upper Part of the Stalk divides into many ſmaller Branches, terminated with looſe Bunches of ſmall white Flowers. Theſe open in *July*, and the Seeds ripen in the Autumn.

The 5th Sort grows naturally in *Siberia* and *Tartary*, the Seeds of it were ſent me from *Peterſburgh*. This hath a perennial Root, from which ariſe many branching Stalks a Foot and a Half high, garniſhed with narrow, ſmooth pointed Leaves, ſhaped like thoſe of Gilliflower; at the Top of the Stalks are produced looſe Cluſters of very ſmall white Flowers, which appear at the ſame Time with the former Sorts, and the Seeds ripen in the Autumn.

Theſe Plants have no great Beauty, ſo are rarely cultivated but in Botanick Gardens, for Variety.

They are propagated by Seeds, which ſhould be ſown in a Bed of light Earth, and when the Plants are fit to remove, they may be tranſplanted into the Places where they are deſigned to remain, and will require no other Culture but to keep them clean from Weeds; for the Roots will continue ſeveral Years, and annually produce Flowers and Seeds.

H.

HÆMANTHUS. *Tourn. Inſt. R. H.* 657. *Tab.* 453. *Lin. Gen. Pl.* 394. *Dracunculoides. Boerh. Ind.* 2. 226. Blood-flower.

The *Characters* are,

The Flower has a permanent Empalement of 6 Leaves, which is large and ſhaped like an Umbel. It hath 1 *erect Petal, cut into* 6 *Parts, having a ſhort angular Tube, and* 6 *Awl-ſhaped Stamina, inſerted in the Petal, but longer, and terminated by oblong proſtrate Summits. The Germen is ſituated under the Flower, ſupporting a ſingle Style the Length of the Stamina, crowned by a ſingle Stigma. The Germen becomes a roundiſh Berry with* 3 *Cells, each containing* 1 *triangular Seed.*

The *Species* are,

1. HÆMANTHUS *foliis linguiformibus planis. Prod. Leyd.* 42. Blood-flower with plain Tongue-ſhaped Leaves. *Hæmanthus Africanus. H. L. Bat. African* Blood-flower, or *Cape* Tulip.

2. HÆMANTHUS *foliis longioribus carinatis.* Blood-flower with longer Keel-ſhaped Leaves.

3. HÆMANTHUS *foliis lanceolatis undulatis. Hort. Cliff.* 127. Blood-flower with Spear-ſhaped waved Leaves. *Hæmanthus colchici foliis perianthio herbaceo. Hort. Elth.* 167. Blood-flower with Meadow-Saffron Leaves, and an herbaceous Involucrum; and the *Dracunculoides. Boerh. Ind. alt.* 2. 226. Baſtard Dragon.

The 1ſt Sort has been many Years in ſeveral curious Gardens in *Europe*, where it ſeldom flowers. This hath a large bulbous Root, from which in the Autumn come out two broad flat Leaves of a fleſhy Conſiſtence, ſhaped like a Tongue, which turn backward on each Side, and ſpread flat on the Ground, ſo have a ſingular Appearance all the Winter; and in the Spring theſe Leaves decay; ſo that from *May* to the Beginning of *Auguſt*, they are deſtitute of Leaves: When theſe produce their Flowers, it is always in the Autumn, juſt before the new Leaves come out. In the Books where this Plant is figured, the Flowers are repreſented growing upon a ſtrong upright Foot Stalk, but all thoſe which I have ſeen in flower, never have riſen more than two Inches from the Bulb, with a large Cluſter of bright red Flowers, incloſed in a common leafy Empalement; theſe were tubulous, with one Petal cut into 6 Parts, each having 6 long Stamina, ſtanding out beyond the Petal, and in the Center appears the Germen ſitting under the Flower, ſupporting a ſingle Style, crowned with a Stigma. The Germen never ripens to a Seed in *England*, but decays with the Flower, and then the green Leaves grow and ſpread on the Ground.

The 2d Sort hath a large bulbous Root like the firſt, which ſends out 3 or 4 Leaves, that grow a Foot long or more; theſe are not flat like thoſe of the other, but are hollowed like the Keel of a Boat, and ſtand more erect than thoſe of the former Sort, but are not quite ſo broad; the Flowers of this are like thoſe of the firſt, but are of a paler red; this is certainly different from the other. I received the Roots of this from Dr. *Van Royen*, Profeſſor of Botany at *Leyden*.

The 3d Sort hath Roots compoſed of many thick fleſhy Tubers which join at the Top, where they form a Head, out of which ariſes a fleſhy ſpotted Stalk, like that of the Dragon, which ſpreads out at the Top into ſeveral Spear-ſhaped Leaves, waved on their Edges. The Stalks grow about a Foot high, and the Leaves are 6 or 8 Inches long, and 2 broad in the Middle; from the Side of this Stalk near the Ground, breaks out a ſtrong fleſhy Foot Stalk, about 6 or 8 Inches long, ſuſtaining at the Top a large Cluſter of Flowers, included in one common Empalement or Covering, which is permanent; the Flowers are ſhaped like thoſe of the other Sorts, but are of a yellowiſh red Colour. Theſe appear in *May*, *June*, or *July*, and are ſucceeded by Berries of a beautiful red Colour when ripe.

The two firſt Sorts are with Difficulty propagated in *Europe*, for their Roots ſeldom put out any Offſets, but the Gardens in *Holland* are ſupplied with them from the *Cape of Good Hope*, where they naturally grow, and produce Seeds; they are too tender to thrive in this Country without artificial Heat in Winter, therefore the Roots muſt be planted in Pots filled with light loamy Earth, and, in the Winter, placed in a moderate Degree of Warmth, where, during that Seaſon, the Leaves will be in full Vigour, ſo will make a pretty Appearance when intermixed with other Plants in the Stove, and though they but ſeldom flower here, yet are they worthy of a Place in every Garden where there is Conveniency of keeping them. The Roots may be taken up when their Leaves are decayed, and kept out of the Ground till *Auguſt*, when they ſhould be new potted, and may remain abroad till the End of that Month, at which Time they ſhould be removed into the Stove, and during the Time they are growing, will require to have frequent Waterings, but it muſt not be given to them in large Quantities.

The 3d Sort is alſo a Native of the *Cape of Good Hope*, from whence it was firſt brought to *Holland*, where it has been propagated, and diſperſed over *Europe*;

rope; this may be propagated by parting the Roots; the beſt Time for this is the Spring, before the Plants put out new Stalks, which is alſo a right Time to ſhift and new pot them; but as the Roots do not multiply very faſt in Offsets, the beſt Way is to propagate them from Seeds, which they ripen plentifully in *England*; theſe ſhould be ſown ſoon after they are ripe, in Pots filled with light Earth, and kept in the Stove all the Winter; if theſe Pots are plunged into the Tan Bed in the Bark Stove, in the Vacancies between the Plants, the Earth will be kept warm, and will not dry ſo faſt, as when they are placed in a dry Stove, ſo the Seeds will be ſooner prepared to vegetate; in the Spring the Pots may be taken out of the Stove, and plunged into a hot Bed, which will bring up the Plants; theſe muſt have Air admitted to them every Day in mild Weather, to prevent their drawing up weak; and when they are fit to remove, they may be each planted in a ſeparate ſmall Pot filled with light Earth, and plunged into the hot Bed again, to promote their taking new Root; then they muſt be gradually hardened, and afterward may be removed into the dry Stove, where they ſhould conſtantly remain, otherwiſe the Plants will not thrive and flower in this Country. In the Winter Seaſon they muſt not have too much Wet, for as their Roots are fleſhy and ſucculent, ſo they are apt to rot with Moiſture. In the Summer they muſt have a large Share of Air in warm Weather, and require to be frequently watered, eſpecially during the Time of their flowering.

HÆMATOXYLUM. *Lin. Gen. Pl.* 417. Bloodwood, Logwood, or *Campeachy* Wood.

The *Characters* are,

The Flower hath a permanent Empalement, cut into 5 *oval Segments. It hath* 5 *oval Petals, which are equal, and larger than the Empalement, and* 10 *Awl-ſhaped Stamina, longer than the Petals, terminated by ſmall Summits. In the Center is ſituated an oblong oval Germen, ſupporting a ſingle Style, crowned by a thick indented Stigma. The Germen becomes a compreſſed obtuſe Capſule, with one Cell, opening with two Valves, containing* 2 *or* 3 *oblong Kidney-ſhaped Seeds.*

We have but one *Species* of this Genus, *viz.*

Hæmatoxylum. *Hort. Cliff.* 160. Logwood. *Lignum Campechianum, ſpecies quædam. Sloan. Cat. Jam.* 213. *Campeachy* Wood.

This Tree grows naturally in the Bay of *Campeachy*, at *Honduras*, and other Parts of the *Spaniſh Weſt-Indies*, where it riſes from 16 to 24 Feet high. The Stems are generally crooked, and very deformed, and ſeldom thicker than a Man's Thigh. The Branches come out on every Side; they are crooked, irregular, and armed with ſtrong Thorns, and garniſhed with winged Leaves, compoſed of 3 or 4 Pair of Lobes, which are obtuſe, and indented at the Top. The Flowers come in a Racemus from the Wings of the Leaves, ſtanding erect; they are of a pale yellowiſh Colour, with a purple Empalement, and are ſucceeded by flat oblong Pods, each containing two or three Kidney-ſhaped Seeds.

The Wood of this Tree is brought to *Europe*, where it is uſed for dying Purples, and for the fineſt Blacks, ſo is a valuable Commodity; but the *Spaniards*, who claim a Right to the Poſſeſſion of thoſe Places where it naturally grows, are for excluding all other Countries from cutting it, which has occaſioned many Diſputes with their Neighbours, but particularly with the *Engliſh*; this is to be hoped will ſoon be over, as there are ſome of the Planters in *Jamaica*, and the other Iſlands in *America*, belonging to the Crown of *Great-Britain*, who have propagated this Tree in ſo great Plenty, as to have Hopes of ſupplying the Demand for this Wood in *Britain* in a very few Years; for the Trees grow ſo faſt there, as to be fit for Uſe in 10 or 12 Years from Seed; and as they produce great Plenty of Seeds in the *Britiſh* Colonies, ſo thoſe Seeds ſcattering about, the Plants come up in all the neighbouring Lands, therefore will ſoon be like an indigenous Plant of the Country.

Some of the Planters in *Jamaica* have incloſed their Eſtates with Hedges formed of theſe Trees, which are very ſtrong and durable, but where the Hedges are cut, it will greatly retard the Growth of the Trees, ſo that thoſe who propoſe to make an Advantage by the Propagation of the Wood, ſhould ſow the Seeds upon ſwampy Lands, which may be unfit for growing Sugar, and permit all their Branches to remain, which will be of great Uſe in augmenting the Bulk of their Stems; and if, while the Plants are young, they are kept clean from Weeds, *&c.* it will be of great Advantage in promoting their Growth. I have been credibly informed by ſome of the Planters in *Jamaica*, that they have had ſome Plants of this Sort upward of 10 Feet high in 3 Years, ſo that it requires but few Years to raiſe a Supply of this Wood, ſufficient to anſwer all the Demands for it.

This Plant is preſerved in ſome curious Gardens in *England*, for Variety. The Seeds are frequently brought from *America*, which, if freſh, readily grow when ſown upon a good hot Bed; and if the Plants are kept in a moderate hot Bed, they will grow upwards of a Foot high the ſame Year, and, while the Plants are young, they are generally well furniſhed with Leaves, but afterward they make but little Progreſs, and are frequently but thinly clothed with Leaves. Theſe Plants are very tender, ſo ſhould be conſtantly kept in the Bark Stove, where, if they are duly watered, and the Stove kept in a good Degree of Heat, the Plants may be preſerved very well. There are ſome of theſe Plants now in *England*, upward of 6 Feet high, and as thriving as thoſe in their native Soil.

HALYCACABUM. *See* Phyſalis.

HALICACABUS PEREGRINA. *See* Cardioſpermum.

HALIMUS. *See* Atriplex.

HALLERIA. *Lin. Gen. Pl.* 679. *Caprifolium. Boerh. Ind. Alt.* 2. p. 226. *African* Fly Honeyſuckle.

The *Characters* are,

The Flower hath a permanent Empalement of 1 *Leaf, cut into* 3 *Parts at the Top, the upper Segment being much broader than the other. It hath* 1 *Petal of the grinning Kind. The Bottom of the Tube is roundiſh. The Chaps are ſwollen and inflexed, the Brim is erect and oblique, cut into* 4 *Segments, the upper being longer than the others, and is blunt, with an Indenture at the Top, the* 2 *Side ones are ſhorter, and pointed, the lower is very ſhort and acute. It hath* 4 *Stamina, which are briſtly,* 2 *being* *longer than the other, terminated by twin Summits. In the Bottom of the Tube is ſituated an oval Germen, with a Style longer than the Stamina, crowned by a ſingle Stigma. The Germen becomes a roundiſh Berry with two Cells, each containing one hard Seed.*

We have but one *Species* of this Genus, *viz.*

Halleria. *Hort. Cliff.* 323. This Plant has its Title from Dr. *Haller*, who was Profeſſor of Botany at *Gottengen*, in *Germany*. This is the *Caprifolium Africanum folio pruni leviter ſerrato, flore ruberrimo, baccâ nigrâ. Boerh. Ind. alt.* 2. 226. *African* Fly Honeyſuckle with a Plum Leaf lightly ſawed, a very red Flower, and a black Berry.

The *Engliſh* Name which I have here added, has been given to this Plant by ſome Gardeners, who obſerved that the Shape of the Flower had ſome Reſemblance to that of the Upright, or Fly Honeyſuckle, and for want of an *Engliſh* Name, gave this to it, or they might take it from the *Latin* Name, by which it was called by Dr. *Boerhaave*, who made it a Species of Honeyſuckle.

This Plant grows 6 or 8 Feet High, having a woody Stem, well furniſhed with Branches; theſe have oval ſawed Leaves, placed oppoſite by Pairs, and continue green through the Year; the Flowers come out ſingly, and are of a red Colour, but, being intermixed with the Leaves, are not ſeen unleſs they are looked after, for they grow ſcatteringly on the Branches; theſe come out in *June*, and the Seeds ripen in *September*, the Leaves are green in Winter, ſo the Plants make a Variety in the Green-houſe during that Seaſon.

It may be propagated by Cuttings, which, if planted in Pots filled with light Earth in the Spring, and plunged into a gentle hot Bed, will ſoon take Root; theſe Plants may be expoſed in Summer, and will require Plenty of Water in that Seaſon; in Winter they muſt be houſed with Myrtles, and other hardy exotick Plants, which require a large Share of Air in mild Weather.

HAMAMELIS. *Lin. Gen. Pl.* 155. *Trilopus. Mitch. Gen.* 22. The Witch Hazel.

The *Characters* are,

It is male and female in different Plants; the male Flowers have a four-leaved Empalement, and 4 *narrow Petals, reflexed; they have* 4 *narrow Stamina, ſhorter than the Petals, terminated by horned reflexed Summits. The female Flowers have a four-leaved Involucrum, in which are* 4 *Flowers; theſe have a four-leaved Empalement, coloured; they have* 4 *narrow Petals, reflexed, and* 4 *Nectaria adhering to the Petals. In the Center is ſituated an oval hairy Germen, ſupporting* 2 *Styles, crowned by headed Stigmas. The Germen becomes an oval Capſule, ſitting in the Involucrum, having* 2 *Cells, each containing* 1 *hard oblong ſmooth Seed.*

We have but one *Species* of this Genus in the *Engliſh* Gardens at preſent, *viz.*

Hamamelis. *Flor. Virg.* 139. The Witch Hazel. *Piſtachia Virginiana nigra, coryli foliis. Pluk. Alm.* 296. Black *Virginia Piſtachia* with Hazel Leaves.

This Plant grows naturally in *North America*, from whence the Seeds have been brought to *Europe*, and many of the Plants have been raiſed in the *Engliſh* Gardens, where they are propagated for Sale by the Nurſery Gardeners. It hath a woody Stem, from 2 to 3 Feet high, ſending out many ſlender Branches, garniſhed with oval Leaves, indented on their Edges, having great Reſemblance to thoſe of the Hazel, placed alternately on the Branches; theſe fall away in Autumn, and when the Plants are deſtitute of Leaves, the Flowers come out in Cluſters from the Joints of the Branches; theſe ſometimes appear the latter End of *October*, and often not till *December*, but are not ſucceeded by Seeds in this Country.

As the Flowers of this Shrub make very little Appearance, it is only preſerved in the Gardens of the Curious, for Variety.

This is propagated by laying down the young Branches in Autumn, which will take Root in one Year, provided they are duly watered in dry Weather; but many of the Plants which are in the Gardens, have been produced from Seeds which came from *America*; theſe Seeds always remain a whole Year in the Ground, ſo they ſhould be ſown in Pots which may be plunged into the Ground in a ſhady Part of the Garden, where they may remain all the Summer, and require no other Care but keep the Pots clean from Weeds, and in very dry Weather to water them now and then; in Autumn the Pots may be removed to a warmer Situation, and plunged into the Ground under a warm Hedge, and if the Winter ſhould prove very ſevere, they ſhould have ſome light Covering thrown over the Pots, which will ſecure the Seeds from being deſtroyed. In the Spring the Plants will come up, therefore as the Seaſon grows warm, the Pots may be removed where they may have the Morning Sun till Eleven o'Clock, and if they are duly watered in dry Weather, the Plants will have made good Progreſs by Autumn, when they ſhould be tranſplanted, either into ſmall Pots, or in a Nurſery Bed, where in one, or at moſt two Years Time, They will be ſtrong enough to plant where they are deſigned to remain; they love a moiſt Soil, and a ſhady Situation.

HARMALA. *See* Peganum.

HAWTHORN. *See* Meſpilus.

HAZEL. *See* Corylus.

HEDERA. *Lin. Gen. Plant. Tourn. Inſt. R. H.* 612. *Tab.* 384. The Ivy Tree.

The *Characters* are,

The Flowers are diſpoſed in Form of an Umbel, having a ſmall Involucrum indented in many Parts. The Empalement is cut into 5 *Parts, and ſits upon the Germen. The Flower hath* 5 *oblong Petals, which ſpread open, whoſe Points are incurved; they have* 5 *Awl-ſhaped Stamina, terminated by proſtrate Summits, which are cut into* 2 *at their Baſe. The Germen, which is ſituated below the Flower, ſupports a ſhort Style, crowned by a ſingle Stigma. The Germen becomes a globular Berry, with one Cell, incloſing* 4 *or* 5 *large Seeds, convex on one Side, and angular on the other.*

The *Species* are,

1. Hedera *foliis ovatis lobatiſque. Flor. Lapp.* 91. Ivy with oval and lobed Leaves. *Hedera arborea. C. B. P.* 305. Tree Ivy, and the *Hedera communis major. J. B.* 2. 111. Great common Ivy.

2. Hedera *foliis quinatis, ovatis, ſerratis. Hort. Cliff.* 74. Ivy with Leaves compoſed of 5 Lobes, which are ſawed. *Vitis quinquefolia Canadenſis ſcandens. Tourn. Inſt.*

Inſt. 613. Climbing *Canada* Vine with 5 Leaves, commonly called *Virginia* Creeper.

The 1ſt Sort grows naturally in moſt Parts of *England*, where it meets with any neighbouring Support. The Stalks will faſten to it, and riſe to a very great Height, ſending out Roots on every Side, which get into the Joints of Walls, or the Bark of Trees, and thereby are ſupported; or if there is no Support near, the Stalks trail upon the Ground, and take Root all their Length, ſo that they cloſely cover the Surface, and are difficult to eradicate, for where any ſmall Parts of the Stalks are left, they will ſoon ſpread and multiply. While theſe are fixed to any Support, or trail upon the Ground, their Stalks are ſlender and flexible, but when they have reached to the Top of their Support, they ſhorten and become woody, forming themſelves into large buſhy Heads, aud their Leaves are larger, more of an oval Shape, and not divided into Lobes like the lower Leaves, ſo that it hath a different Appearance, which has occaſioned ſome to take them for diſtinct Species.

In the latter Part of the laſt Century, when it was the Faſhion to fill Gardens with all Sorts of ſheered Evergreens, there were many of theſe Plants trained into round Heads, which were clipped into Balls, or in Form of a Cone; and as theſe were ſo hardy as not to be injured by Weather, and would grow in any Soil, they were then much eſteemed, but ſince that unnatural Taſte has been exploded, theſe Plants are ſeldom admitted into Gardens, unleſs to cover Walls, or run over Grottos, &c. for which Purpoſe there is no Plant ſo well adapted.

There are two Varieties of this, one with Silver-ſtriped Leaves, and the other with yellowiſh Leaves on the Top of the Branches; theſe are preſerved in ſome Gardens for Variety.

Theſe Plants are eaſily propagated by their trailing Branches, which ſend forth Roots their whole Length, which Branches, being cut off, and planted, will grow in almoſt any Soil or Situation, and may be trained up to Stems, or ſuffered to remain Climbers, to cover Walls, Pales, &c.

They may alſo be propagated by Seeds, which ſhould be ſown ſoon after they are ripe, which is in the Beginning of *April*; if theſe are kept moiſt, and ſhaded, they will grow the ſame Spring, otherwiſe they will remain a Year in the Ground, therefore few Perſons trouble themſelves to propagate the Plants in this Way, the other being much more expeditious.

While the Stalks of this Plant trail, either on the Ground, or upon Walls, or other Support, they do not produce any Flowers, which has occaſioned its being called ſterile, or barren Ivy; but when the Branches get above their Support, they produce Flowers at the End of every Shoot; theſe appear in *September*, and are ſucceeded by Berries, which turn black before they are ripe, and are formed into round Bunches, called *Corymbi*, and from theſe the Epithet of *Corymbus*, ſo frequently uſed by Botaniſts, is taken.

The Leaves of this Plant are frequently applied to Iſſues to keep them cool, and free from Inflammations; they are alſo uſed for curing of Scabs, Sores, and ſcald Heads. Mr. *Boyle*, in his *Uſefulneſs of Experimental Philoſophy*, commends a large Doſe of the full ripe Berries, as a Remedy againſt the Plague; but *Schroder* ſays, they purge upward and downward. The Gum of Ivy is cauſtick, but is recommended by ſome to take Spots and Freckles out of the Face.

There is Mention made of another Species of Ivy, which is titled *Hedera Poetica*, by *Caſpar Baubin*; this grows in many of the Iſlands of the *Archipelago*, and produces yellow Berries; but as I have not ſeen this Plant, I cannot determine if it is a diſtinct Species. Dr. *Linnæus* ſuppoſes it to be only a Variety, though he has not ſeen the Plant; but *Tournefort*, who gathered it in the *Levant*, puts it down as a different Sort.

The 2d Sort grows naturally in all the Northern Parts of *America*; it was firſt brought to *Europe*, from *Canada*, and has been long cultivated in the *Engliſh* Gardens, chiefly to plant againſt Walls, or high Buildings to cover them, which theſe Plants will do in a ſhort Time, for they will ſhoot almoſt 20 Feet in one Year, and will mount up to the Top of the higheſt Building; but as the Leaves fall off in Autumn, the Plants make but an indifferent Appearance in Winter, and as it is late before they come out in the Spring, they are not much eſteemed, unleſs for ſuch Situations, where better Things will not thrive, for this Plant will thrive in the Midſt of *London*, and is not injured by the Smoke or the Cloſeneſs of the Air. The Stalks of theſe Plants put out Roots, which faſten themſelves into the Joints of the Walls, whereby they are ſupported.

This may be propagated by Cuttings, which if planted in Autumn on a ſhady Border, will take Root, and by the following Autumn will be fit to plant where they are deſigned to remain.

HEDERA TERRESTRIS. *See* Glechoma.

HEDGES. Hedges are either planted to make Fences round Incloſures, or to part off and divide the ſeveral Parts of a Garden; when they are deſigned as outward Fences, they are planted either with Hawthorn, Crabs, or Black Thorn, which is the Sloe; but thoſe Hedges which are planted in Gardens, either to ſurround Wilderneſs Quarters, or to ſcreen the other Parts of a Garden from Sight, are planted with various Sorts of Plants, according to the Fancy of the Owner, ſome preferring ever-green Hedges, in which Caſe the Holly is beſt, nex the Yew, then Laurel, Lauruſtinus, Phillyrea, &c. Others, who make Choice of the deciduous Plants, prefer the Beech and Hornbeam, *Engliſh* Elm, or the Alder, to any other; I ſhall firſt treat of thoſe Hedges which are planted for outſide Fences, and afterward briefly touch on the other.

Theſe Hedges are moſt commonly made of Quick, yet it will be proper, before planting, to conſider the Nature of the Land, and what Sorts of Plants will thrive beſt in that Soil, whether it be Clay, Gravel, Sand, &c. likewiſe what the Soil is from whence the Plants are to be taken, for if the Land they are taken from is better than that in which they are to be planted, it will be more difficult to get them to grow. As for the Size, the Sets ought to be about the Bigneſs of a Gooſe Quill, and cut within about 4 or 5 Inches of the Ground, they ſhould be freſh taken up, ſtrait, ſmooth, and well rooted. Thoſe Plants which are raiſed in the Nurſery are to be preferred to all

all others, and if raiſed on a Spot near the Place it will be beſt.

Secondly, If the Hedge has a Ditch, it ſhould be made ſix Feet wide at Top, and one Foot and a Half at Bottom, and 3 Feet deep, that each Side may have a proper Slope; for when the Banks are made too upright, they are very ſubject to fall down after every Froſt, or hard Rain; beſides if the Ditches are made narrower, they are ſoon choked up in Autumn by the falling Leaves, and the Growth of Weeds, nor are they a ſufficient Fence to the Hedge againſt Cattle, where they are narrower.

Thirdly, If the Bank be without a Ditch, the Sets ſhould be ſet in 2 Rows, almoſt perpendicular, at the Diſtance of a Foot from each other, in the quincunx Order, ſo that in Effect they will be but 6 Inches aſunder.

Fourthly, the Turf is to be laid with the Graſs Side downwards, on that Side of the Ditch the Bank is deſigned to be made, and ſome of the beſt Mould ſhould be laid upon it to bed the Quick; then the Quick is to be laid upon it, a Foot aſunder, ſo that the End of it may be inclining upwards.

Fifthly, When the firſt Row of Quick is laid, it muſt be covered with Mould, and the Turf laid upon it, as before, and ſome Mould upon it, ſo that when the Bank is a Foot high, you may lay another Row of Sets againſt the Spaces of the lower Quick, and cover them as the former was done, and the Bank is to be topped with the Bottom of the Ditch, and a dry or dead Hedge laid on the other Side, to defend the under Plantation from the Cattle.

In making theſe dead Hedges, there ſhould be Stakes driven into the looſe Earth, at about 2 Feet and a Half Diſtance, ſo low as to reach the firm Ground.

Oak Stakes are accounted the beſt, and Black Thorn and Sallow the next; then let the ſmall Buſhes be laid at Bottom, but not too thick, for that will cauſe the Buſhes to rot, but the upper Part of the Hedge ſhould be laid with long Buſhes to bind the Stakes in with, by interweaving them.

And, in order to render the Hedge yet ſtronger, you may edder it (as it is called,) *i. e.* bind the Top of the Stakes in with ſome ſmall long Poles, or Sticks, on each Side, and when the Eddering is finiſhed, drive the Stakes anew, becauſe waving the Hedge and Eddering is apt to looſen the Stakes.

The Quick muſt be kept conſtantly weeded, and ſecured from being cropped by Cattle, and in *February* it will be proper to cut it within an Inch of the Ground, which will cauſe it to ſhoot ſtrong, and help it much in the Growth.

When a Hedge is of about 8 or 9 Years Growth, it will be proper to plaſh it; the beſt Time for this Work is either in *October* or *February*.

When a Hedge is grown old, *i. e.* of about 20 or 30 Years Growth, and there are in it old Stubs, as well as new Shoots, the old Stubs ſhould be cut ſloping off within 2 or 3 Inches of the Ground, and the beſt and longeſt of the middle Size ſhould be left to lay down, and ſome of the ſtrongeſt, at the Height of 5 or 6 Feet, according as you deſign the Height of the Hedge to be, may be left to ſerve inſtead of Stakes, and freſh Stakes ſhould be put in thoſe Places where they are wanting; the Hedge ſhould be thinned, ſo as to leave on the Stubs only ſuch Shoots as are deſigned to be of Uſe, that there may be Room left to put a Spade in between them; the Ditch alſo ſhould be cleanſed, and each Side of the Slope kept as in a new Ditch; and where the Earth is waſhed from the Roots of the Quick, or is hollow, face it anew with ſo much of the firſt Spit of Earth that is dug out of the Ditch, as there is Occaſion for, and lay what is dug out at the ſecond Spit, on the Top of the Bank, for if it be laid on the Side, or Face of the Bank, it will ſlip into the Ditch again when Wet comes, and take a great Deal of the Bank along with it.

In plaſhing Quicks, there are two Extremes to be avoided; the firſt is, laying it too low, and too thick; becauſe it makes the Sap run all into the Shoots, and leaves the Plaſhes without Nouriſhment, which, with the Thickneſs of the Hedge, kills them.

Secondly, It muſt not be laid too high, becauſe this draws all the Sap into the Plaſhes, and ſo cauſes but ſmall Shoots at the Bottom, and makes the Hedge ſo thin, that it will neither hinder the Cattle from going through, nor from cropping it.

When the Shoot that is deſigned to be plaſhed is bent, give it a ſmall Cut with a Bill, half through, ſloping a little downwards, and then weave it about the Stakes, and trim off the ſmall ſuperfluous Branches that ſtraggle out too far on both Sides of the Hedges.

If the Stubs are very old, cut them quite down, and ſecure them with good dead Hedges on both Sides, till the young Shoots are got up tall enough to plaſh, and plant new Sets in the void Spaces.

In making a Hedge, if it be ſet with Crab, or Apple Stocks, it will be proper to leave one ſtanding uncut up at every 30 or 40 Feet, on both Sides the Hedge, if the Ground be your own; which being done, they may be ſo ordered, by pruning or ſtaking, that one may lean into one Ground, and the other into another, *&c.*

Theſe Stocks ſhould be pruned up every Year, till they are brought out of the Reach of the Cattle, and then they may be grafted with the Red Streak, Gennetmoil, or what other Fruit you pleaſe.

If the Stocks be of Apple Kernels, they may ſtand ungrafted, and they will yield very good Cyder Fruit, but then ſuch Stocks as are not grafted, will be longer before they bear; and alſo, when you do graft, you may be certain of your Kind; but if you find a very natural Stock, which by Leaf, Shoot, and Bud, appears likely, you may try it, and ſo you may have a new fine Fruit, and if you do not like it you may graft it when you pleaſe.

As for the reſt of the Hedge, when it has ſhot 4 or 5 Years, you may lay it to make a Fence with, for doing which, take the following Directions:

Firſt, At every Laying to lay down ſome old Plaſhes; or, if the Hedge be thin, young ones; but they muſt be ſo laid, as to point with their Ends to the Ditch Side of the Bank, the Ends being kept low on the Bank; by being ſo ordered, they will the better thicken the Bottom of the Hedge, and keep up the Earth of the Bank.

Secondly, To heighten the Bank every Time you lay

Earth on it, ſo as to cover the Layers, all but the Ends, this Earth will very much help the Quick; and by heightening the Banks, and deepening the Ditch, you will render the Fence the better.

Thirdly, not to cut the Plaſhes too much, but juſt ſo as they may bend down well, not to lay them too upright, as ſome do, but to lay them near to a Level; and by ſo doing, the Sap will the better break out at ſeveral Places, and not run ſo much to the Ends, as it will when they lie much upon the Slope.

If you have much Wood to ſpare, you may cut up great Part of thoſe that grow near the Ditch, but then you ought to hang the Bank with Buſhes, to prevent Cattle from cropping them the firſt Year; theſe will ſhoot ſtrong, ſecure the Hedge, keep up the Bank, and thicken the Bottom of the Hedge.

Fourthly, Take Care to lay the Hedge pretty thick, and turn the Beard on the Ditch Side, but you muſt not let the Beard hang uncut (though it makes a good Shew at the firſt making), but you muſt cut off all the ſtraggling Boughs within half a Foot of the Hedge on both Sides, and theſe will cauſe it to ſhoot ſtrong at theſe Places, and make the Hedge much the thicker.

Fifthly, If the Bank be high, make the Hedge ſo low, that it may juſt ſerve for a Fence the firſt Year, for it will ſoon grow higher, and the lower the Hedge is made, the better the Quick will grow, and alſo the thicker at the Bottom; but Care muſt be taken to preſerve it from Cattle on the Field Side for the two firſt Years that it is made.

Sixthly, if you would have a good Hedge, or Fence, you ſhould new lay it once in 14 or 15 Years, and conſtantly root out Elder, Travellers Joy (which ſome call Bull-bine), Bryony, *&c.* and do not leave too many high Standards, or Pollards in it, though the Elm is one of the beſt, alſo no dead Wood is to be left in the Bottom of the Hedges, for that will choke the Quick; but if there be a Gap, the dead Hedge ſhould be made at a Diſtance.

The Crab is alſo frequently planted for Hedges, and if the Plants are raiſed from the Kernels of the ſmall wild Crab, they are much to be preferred to thoſe raiſed from the Kernels of all Sorts of Apples without Diſtinction, becauſe the Plants of the true ſmall Crab never ſhoot ſo ſtrong as thoſe of the Apples, ſo may be better kept within the proper Compaſs of a Hedge, and as they have generally more Thorns upon them, they are better guarded againſt Cattle, *&c.* than the other; beſides, the Plants of the Crab will grow more equal than thoſe raiſed from the Kernels of various Kinds of Apples, for theſe always produce a Variety of Plants, which differ from each other in their Manner of Growth, as much as in the Size and Flavour of their Fruits, ſo that Hedges made of theſe will not appear ſo well, nor can be ſo well managed as the other.

Some Perſons intermix Crab with the White Thorn in their Hedges, but this is not a good Method; for the Plants of the Crab will grow much ſtronger than thoſe of the White Thorn, ſo that the Hedge will not be of equal Growth, which is not near ſo beautiful, or uſeful, as when the Plants of a Hedge keep Pace in their Growth.

The Black Thorn, or Sloe, is alſo frequently planted for Hedges, and is a ſtrong durable Plant for that Purpoſe, eſpecially as it is ſo ſtrongly armed with Thorns, that Cattle ſeldom care to brouze upon it; but where this is planted, the beſt Way is to raiſe the Plants from the Stones of the Fruit; for all thoſe taken from the Roots of old Trees, ſpawn, and put out Suckers in ſuch Plenty from their Roots, as to ſpread over, and fill the neighbouring Ground to a conſiderable Diſtance on each Side of the Hedge; and this Plenty of Suckers drawing away the Nouriſhment from the old Plants of the Hedge, they never grow ſo well as where there are few or no Suckers produced, which thoſe Plants which are propagated from the Stones ſend not forth, or at leaſt but ſparingly, therefore may with little Trouble be kept clear of them. The beſt Method of raiſing theſe Hedges is, to ſow the Stones in the Place where the Hedge is intended (where it can be conveniently done), for then the Plants will make a much greater Progreſs than if tranſplanted; but the Objection to this Method will ariſe from the Difficulty of ſecuring the young Plants from the Cattle; but this can have little Force, when it muſt be conſidered, that if the Hedge is planted, it muſt be fenced for ſome Years, to prevent the Cattle from deſtroying it; therefore the ſame Fence will do for it when ſown, nor will this require a Fence much longer than the other. For the Plants which ſtand unremoved, will make a better Fence in 7 Years, than that which is planted, tho' the Plants ſhould be of 3 or 4 Years Growth when planted, which is, what I have ſeen 2 or 3 Times, where the Experiment has been tried. The Stones of this Fruit ſhould be ſown early in *January*, if the Weather will permit, but when they are kept out of the Ground longer, it will be proper to mix them with Sand, and keep them in a cool Place. The Buſhes of the Black Thorn are by much the beſt of any, for dead Hedges, being of longer Duration, and having many Thorns, neither the Cattle nor the Hedge-breakers, will care to meddle with them; theſe Buſhes are alſo the beſt to be uſed for under Ground Drains, for draining Land; for they will remain ſound a long Time, when the Air is excluded from them.

The Holly is ſometimes planted for Hedges, and is a very durable ſtrong Fence, but where it is expoſed, there will be great Difficulty to prevent its being deſtroyed, otherwiſe it is by far the moſt beautiful Plant, and being an Evergreen, will afford much better Shelter to Cattle, in Winter, than any other Sort of Hedge, and the Leaves being armed with Thorns, the Cattle will not care to brouze upon it. Another Objection to this Plant is the ſlow Growth, ſo that Hedges planted with this Plant, require to be fenced a much longer Time than moſt others. This is a Reaſon which muſt be admitted, to prevent this being generally practiſed; but in ſuch Grounds as lie contiguous to, or in Sight of Gentlemens Houſes, theſe Sort of Hedges will have an exceeding good Effect, eſpecially when they are well kept, as they will appear beautiful at all Seaſons of the Year; and in the Spring of the Year, when the ſharp Winds render it unpleaſant to walk abroad in expoſed Places, theſe Hedges will afford good Shelter, as they will effectually keep off the cold Winds, if they are kept cloſe and thick. The ſureſt Method of raiſing theſe Hedges is, by ſowing the Berries in the Place where they are to ſtand, but theſe Berries ſhould be buried in the Ground one Year before they are ſown, by which Method they will be prepared to grow the following Spring. The Way of doing this is, to gather the Berries about *Chriſtmas* (which is the Time they are uſually ripe), and put them into large Flower Pots, mixing ſome Sand with them, then dig Holes in the Ground, into which the Pots muſt be ſunk, covering them over with Earth about ten Inches thick; in this Place they may remain till the following *October*, when they ſhou'd be taken up, and ſown in the Place where the Hedge is intended. The Ground from this Hedge ſhould be well trenched, and cleared from the Roots of all bad Weeds, Buſhes, Trees, *&c.* Then two Drills ſhould be made at about a Foot Diſtance from each other, and about two Inches deep, into which the Seeds ſhould be ſcattered pretty cloſe, leſt ſome ſhould fail; for it is better to have too many Plants come up, than to want. The Reaſon of my adviſing two Drills is, that the Hedge may be thick to the Bottom, which in a ſingle Row rarely happens, eſpecially if there is not great Care taken of them in the Beginning. When the Plants come up, they muſt be carefully weeded; for if the Weeds are permitted to grow among them, they will ſoon deſtroy them, or weaken them ſo much, that they will not recover their Strength in a long Time. This ſhould be conſtantly obſerved by every Perſon who is deſirous to have good Hedges of either Sort; for when the Weeds are ſuffered to grow near the Plants, they will not only rob them of a great Part of their Nouriſhment, but alſo prevent their putting out Shoots near the Ground, which will occaſion the Bottom of the Hedge to be thin and naked.

When theſe Holly Hedges are deſigned to be kept very neat, they ſhould be ſheered twice a Year, in *May* and *Auguſt*, but if they are only deſigned as Fences, they need not be ſheered oftener than once a Year, which ſhould be about the latter End of *June*, or Beginning of *July*, and if this be well performed, the Hedges may be kept very beautiful.

The Fences made to ſecure theſe Hedges from Cattle while they are young, ſhould be contrived to admit as much free Air as poſſible, which is abſolutely neceſſary for the Growth of the Plants; for when they are crowded on each Side with dead Hedges, the Plants ſeldom thrive well. The beſt Sort of Fences for this Purpoſe, are thoſe made with Poſts and Rails, or inſtead of Rails, three Ropes drawn from Poſt to Poſt, and Holes made in the Poſts to draw the Ropes through; this is the cheapeſt Fence of this Kind, and will appear very handſome; but if Sheep are not admitted into the Fields, there will be Occaſion for two Ropes only, which will be enough to keep off larger Cattle, and if the Ropes are painted over with a Compoſition of melted Pitch, brown *Spaniſh* Colour, and Oil, mixed well together, they will laſt ſound ſeveral Years; and theſe Sort of Fences never obſtruct the Air, and the Place, at the ſame Time being open to View, the Weeds will be better diſcovered than when the Fences are cloſe. In the latter Caſe, the Hedges are ſometimes ſuffered to be over-run with Weeds, by their being excluded from the Sight, ſo are frequently forgotten, eſpecially in moiſt Weather, when the Weeds grow more luxuriant.

There are ſome Perſons who intermix Holly with the White Thorn, in making their Hedges, which, if rightly managed, will have a good Effect, eſpecially when young; but when this is practiſed, the Holly ſhould be planted ſo near, that the Hedge may be entirely formed of it as it grows up, when the White Thorn ſhould be quite rooted out; for as theſe advance, they will not keep Pace in their Growth, ſo will not appear beautiful when intermixed.

When a Hedge of Holly is intended to be made by Plants, the Ground ſhould be well trenched, as was before adviſed for the Seeds, and (unleſs the Ground be very wet) the Plants ſet in *October*, but, in wet Ground, *March* is preferable. The Plants ſhould not be taken from a better Soil than that in which they are to be planted; for when it ſo happens, the Plants are much longer before they recover this Change, than thoſe taken from a leaner Soil. If the Plants have been before removed two or three Times, they will have better Roots, and will be in leſs Danger of miſcarrying, becauſe they may be removed with Balls of Earth to their Roots. When the Froſt comes on, if ſome Mulch be laid on the Ground near the Roots of the Plants, it will prevent the tender Fibres, which may then have been put out, from being deſtroyed by the Cold. I would never adviſe the planting Hedges with Holly Plants, of above 5 or 6 Years Growth, from the Berries; for when they are older, if they take to grow, they are longer before they form a good Hedge, than Plants much younger; and if they have been twice before tranſplanted, they will more certainly grow.

I ſhall next treat of Hedges for Ornament in Gardens: Theſe are ſometimes planted with Ever-greens, eſpecially if they are not intended to grow very high; in which Caſe, they are planted with deciduous Trees. Ever-green Hedges are planted with Holly, Yew, Laurel, Lauruſtinus, Phillyrea, Alaternus, ever-green Oak, and ſome others of leſs Note. The Holly is preferable to any other, for the Reaſons before given. Next to this, moſt People prefer the Yew, on Account of its growing ſo very cloſe; for when theſe Hedges are well kept, they will be ſo thick that a Bird cannot get through them; but the dead Colour of the Yew, renders theſe Hedges leſs agreeable. The Laurel is one of the moſt beautiful Greens of any of the ever-green Trees, but then it ſhoots ſo luxuriant, as to render it difficult to keep the Hedges planted with it, in tolerable Shape; beſides, the Leaves being very large, if the Hedge is clipped with Sheers, the Leaves will be cut through, which gives them a bad Appearance; therefore where there are Hedges of this Kind, it will be the beſt Way to prune them with a Knife, cutting the Shoots juſt down to a Leaf. And although by this Method the Hedge cannot be rendered ſo even as when cut with Sheers, yet it will have a much better Appearance than that of moſt of the Leaves being cut through and ſtubbed, in the Manner they muſt be when ſheered.

The Lauruſtinus is alſo a very fine Plant for this Purpoſe, but the ſame Objection is to be made to this as hath been to the Laurel; and as one of the great Beauties of this Plant is in its Flowers, which are produced in the Winter and Spring, ſo when theſe are ſheered, the Flowers are generally cut off, by which their Beauty is loſt. Nor can this be avoided, where the Hedge is to be kept in cloſe Order, therefore this Plant is not ſo proper for the Purpoſe; but in Places where Walls or other Fences are deſigned to be hid, there is not any Plant better adapted than this, provided it is rightly managed; for the Branches are ſlender and pliable, ſo may be trained up cloſe to the Fence, whereby it may be entirely covered; and if, inſtead of clipping theſe with Sheers, they are pruned with a Knife, they may be ſo managed, as to have them full of Flowers from the Ground upward. This may be effected by pruning them in *April*, when the Flowers are going off, cutting out thoſe Shoots that have flowered, or project too far from the Fence; always cutting cloſe to the Leaf, that no Stubs may be left; but thoſe new Shoots of the ſame Spring muſt by no Means be ſhortened, becauſe the Flowers are always produced at the Extremity of the Shoots of the ſame Year; therefore when theſe are topped, as they muſt be by ſheering, there can be few or no Flowers upon theſe Plants, except toward the Top, where the Sheers have not paſſed. By this Method of Knife Pruning, the Leaves will alſo be preſerved entire, and the Hedge may always be kept enough within Compaſs; and ſo thick, as fully to anſwer the Purpoſe of covering the Fence; and by the Shoots growing a little irregular, it will make a much better Appearance than any ſhorn Hedge whatever.

The ſmall leaved and the rough leaved Lauruſtinus are the beſt Sorts for this Purpoſe, becauſe their Branches grow cloſer together than thoſe of the ſhining leaved; they are alſo more hardy, and flower much better than the other, when growing in the open Air.

The True Phillyrea is the next beſt Plant for Hedges; it is by the Gardeners called the True Phillyrea, to diſtinguiſh it from the Alaternus, which they ſimply call the Phillyrea. The Branches of this are ſtrong, the Leaves pretty large, and of a ſtrong green Colour. And as this is a Plant of middling Growth, the Hedges planted with this may be led up to the Height of 10 or 12 Feet; and if theſe Hedges are kept narrow at the Top, that there may not be too much Width for the Snow to lodge on them, they may be rendered very cloſe and thick; and being a very good green, will make a fine Appearance.

The Alaternus was formerly much more cultivated in the *Engliſh* Gardens, than at preſent. This was often planted to form Hedges, but the Branches are too pliant for this Purpoſe, being frequently diſplaced by ſtrong Winds, which render theſe Hedges unſightly; they alſo ſhoot very irregular and thin, ſo that the Middle of the Hedge is frequently open and wide, and only the Sides of them can be kept tolerably cloſe, and that muſt be by often clipping them. If we add to this, their being frequently laid or broken down by Snow in the Winter, it muſt be deemed an improper Plant for this Purpoſe.

The Ilex, or ever-green Oak, is alſo planted for Hedges; and where theſe are deſigned to grow pretty tall, it is a fit Plant for the Purpoſe; becauſe it is a Plant of large Growth, eſpecially the Sort moſt common in *England*; for there are two Sorts of them which grow in the South of *France* and *Italy*, that are of much humbler Growth, ſo are better adapted to this Purpoſe, eſpecially where the Hedge is not intended to be high, but theſe are not at preſent common here. When theſe Hedges are planted very young, and kept cloſe trained from the Beginning, they may be very cloſe from the Ground to the Height of 20 Feet or more; but theſe muſt always be kept narrower at the Top than below, that there may not too much Snow lodge upon them in the Winter, which is apt to break and diſplace the Branches, whereby the Hedges will be rendered unſightly.

There are alſo ſome Perſons who have planted the Pyracantha, or ever-green Thorn, Juniper, Box, Cedar of *Virginia*, Bay, &c. as alſo the Halimus, or Sea Purſlane, and the Furz, Roſemary, and ſeveral other Plants for Hedges; but the five Sorts firſt mentioned having very pliant Branches, which require to be ſupported, and the three laſt being often deſtroyed by ſevere Froſt, renders them unfit for this Purpoſe; nor are there other Sorts of ever-green Plants in the *Engliſh* Gardens, ſo well adapted for Hedges, as thoſe before-mentioned.

The deciduous Trees, uſually planted to form Hedges in Gardens, are the following Sorts.

The Hornbeam is much eſteemed for this Purpoſe, eſpecially where they are not required to be very high, or not wanted to grow very faſt; for this Plant, while young, doth not make ſo great Progreſs as many others; but as it is ſlower of Growth, the Hedges may be kept neat with leſs Trouble than moſt other Plants will require; and the Branches naturally growing very cloſe, they will make one of the cloſeſt Hedges of all the deciduous Trees; but as the Leaves of this Tree continue upon the Branches all the Winter, and until the Buds in the Spring force them off, they have a bad Appearance during the Winter Seaſon.

The Beech is alſo a very proper Tree for this Purpoſe, having the ſame good Qualities as the Hornbeam; but the Leaves of this continue late in Winter upon the Branches, when they will have a bad Appearance; beſides, the Litter which is occaſioned by their Leaves gradually falling moſt Part of the Winter, prevents the Garden from being made clean a great while longer, than if there are none of theſe Trees planted.

The ſmall-leaved *Engliſh* Elm, is alſo a proper Tree for tall Hedges; if theſe are planted young, and kept cloſely clipped from their firſt ſetting out, the Hedges may be trained up to the Height of 30 or 40 Feet, and be very cloſe and thick the whole Height. But when theſe Trees are planted for this Purpoſe, they ſhould not be crowded ſo cloſe together as they uſually are; by which Method, when the Trees have ſtood ſome Years, if they have thriven well, their Stems approach ſo near each other, that few Branches can be maintained below, whereby the Bottom of the Hedge will be naked; therefore they ſhould not be planted cloſer together than 7 or 8 Feet, or if they are 10 Feet it will be ſtill better. And although at this Diſtance they will not form a cloſe Hedge ſo ſoon as when the Trees are planted together, yet they will in a few Years recompenſe for that, by their growing much cloſer and better from the Ground upward.

The *Dutch* Elm was formerly in great Eſteem for Hedges, being quick of Growth, and thriving in ſuch Soils as the *Engliſh* Elm would not grow; but the wretched Appearance which theſe Hedges made, after they had been growing ſome Years, very juſtly occaſioned their being almoſt univerſally rooted out of Gardens, for a more abominable Plant was never introduced into Gardens than this.

The Lime Tree hath alſo been recommended for Hedges, and in ſome of the old Gardens there were many planted with this Tree, which, for a few Years after planting, made a tolerable Appearance, eſpecially when they grew on a moiſt Soil; but after they had ſtood ſome Years, they grew very thin at Bottom, and by being ſheered at Top, they were rendered very ſtubby and unſightly, their Leaves growing very thinly on the Branches, frequently turning of a black diſagreeable Colour, and falling off very ſoon in the Autumn, and ſometimes in the Summer in dry Seaſons, ſo that few Perſons make Uſe of them at preſent for this Purpoſe: Nor ſhould any of the very ſtrong ſhooting Trees be applied to this Uſe; for the more they are cut, the ſtronger they will ſhoot, and of Courſe will appear very unſightly; beſides, often cutting theſe Hedges occaſions great Trouble and Expence, and frequent Litters in the Garden.

The Alder is frequently planted for Hedges, and where the Soil is moiſt, there is not any of the deciduous Trees equal to it for this Purpoſe; for the Leaves are of a lively green, continuing freſh till late in the Autumn; and when they decay, their Litter is ſoon over, for they all drop in a ſhort Time.

There are, beſides the Trees before-mentioned, many of the flowering Shrubs which have been planted to form Hedges; ſuch as Roſes, Honeyſuckles, Sweetbriar, *&c.* but theſe do not make a good Appearance, being more difficult to train; and if they are cut to keep them within Compaſs, their Flowers, which are their greateſt Beauty, will be entirely deſtroyed. But as theſe are but of low Growth, they are not proper to plant where the Hedges are to be of any Height.

Although I have given theſe full Directions for planting and ordering theſe Hedges for the Pleaſure Garden, yet I am far from recommending them as ornamental or uſeful. But as there are Numbers of Perſons who may differ from me in their Opinion, and therefore might think it a Deficiency in my Book, had I not given theſe Inſtructions; to avoid their Reproach, I have inſerted as much as I think will be neceſſary for obtaining theſe Hedges, where-ever they are deſired, and at a leſs Expence than the late Method of planting them hath been generally attended with; where it is not uncommon to ſee four Times the Number of Trees planted in theſe Hedges as would have been neceſſary, or that can remain long cloſe together with any Beauty. But moſt People who plant, are in too great a Hurry to have their Gardens filled; and therefore frequently plant ſo cloſe, that in 3 or 4 Years (if their Trees thrive) three Fourths of them will require to be taken away again, to make Room for thoſe left to grow; and there are not wanting Perſons, ready enough to encourage this Practice, ſince their own Intereſt is thereby promoted.

The Taſte in Gardening having been greatly altered of late Years for the better, theſe clipped Hedges have been almoſt excluded; and it is to be hoped, that a little Time will entirely baniſh them out of the *Engliſh* Gardens, as it has already done by the ſhorn Evergreens, which a few Years ſince were eſteemed the greateſt Beauties of Gardens. The latter was introduced by the *Dutch* Gardeners, and that of tall Hedges with Treillage Work, was in Imitation of the *French* Gardens; in ſome of which, the Expence of the Iron Treillage, to ſupport the Trees which compoſed their Cabinets, Pavilions, Bowers, Porticos, and other Pieces of rural Architecture, amounted to a very great Sum. I have been informed, this Work, in one Garden, has coſt above 20000 Crowns; and this only to train up Trees into the diſtorted Shape of Pilaſters, Niches, Cornices, Pediments, *&c.* when, at the ſame Time, theſe can no longer retain the Forms intended, than they are kept cloſely ſhorn into them; for no ſooner do the Trees begin to make freſh Shoots, but the whole Frame is altered; and inſtead of carrying the fine finiſhed Appearance of a regular Piece of Architecture, it is grown into a rude unpoliſhed Form. This expenſive Sort of Work never made much Progreſs in *England*, but that Part of the *French* Taſte, in ſurrounding all the ſeveral Diviſions of Gardens with tall clipped Hedges, making great Alleys, forming the Walks into Stars, and the like ſtiff Performances, have too much obtained for ſome Years paſt in *England*; and the taller theſe clipped Hedges were, the more they were admired; though many Times they ſhut out from the View the Sight of ſome of the nobleſt Oaks, and other Timber Trees, growing in the Quarters; which are infinitely more pleaſing to a Perſon of true Taſte, than all the ridiculous Forms it is poſſible for Trees to be framed in by Art. Beſides, when the Expence of keeping theſe Hedges, together with the great Litter they occaſion when clipped, is conſidered, theſe, added to many other Reaſons which might be given, are ſufficient to exclude them out of Gardens; where they can never be eſteemed neceſſary, but to ſhut out from the View the Sight of worſe Objects.

HEDYPNOIS. *See* Hyoſeris.

HEDYSARUM. *Lin. Gen. Pl.* 793. *Tourn. Inſt. R. H.* 401. *Tab.* 225. *French* Honeyſuckle.

The *Characters* are,

The Flower hath a permanent Empalement of 1 *Leaf, cut into* 5 *Segments at the Top. It is of the Butterfly Kind, having an oblong compreſſed Standard, which is indented at the Point and reflexed; the Wings are oblong and narrow; the Keel is compreſſed, broader at the End, but convex at the Baſe. It hath* 9 *Stamina joined, and* 1 *ſtanding ſeparate, terminated by roundiſh compreſſed Summits; the Stamina are reflexed, having an Angle or Knee; In the Center is ſituated a long narrow Germen, ſupporting an Awl-ſhaped inflexed Style, crowned by a ſingle Stigma. The Germen becomes a jointed Pod which is compreſſed, each Joint being roundiſh, and incloſes a ſingle Kidney-ſhaped Seed.*

The *Species* are,

1. HEDYSARUM *foliis pinnatis, leguminibus articulatis aculeatis, nudis, rectis, caule diffuſo. Hort. Cliff.* 365. *French* Honeyſuckle with winged Leaves, naked, prickly, jointed Pods, and a diffuſed Stalk. *Hedyſarum clypeatum, flore ſuaviter rubente. H. Eyſt. French* Honeyſuckle, with a delicate red Flower.

2. HEDYSARUM *foliis pinnatis, leguminibus articulatis, aculeatis, tomentoſis, caule diffuſo. Hort. Upſal.* 231.

French Honeyſuckle with winged Leaves, jointed, prickly, woolly Pods, and a diffuſed Stalk. *Hedyſarum clypeatum minus, flore purpureo. Raii Hiſt.* Smaller *French* Honeyſuckle, with a purple Flower.

3. HEDYSARUM *foliis ſimplicibus ternatiſque, floribus racemoſis. Hort. Cliff.* 232. *French* Honeyſuckle with ſingle and trifoliate Leaves, and Flowers in Bunches. *Hedyſarum triphyllum Canadenſe. Cornut.* Three leaved *French* Honeyſuckle of *Canada.*

4. HEDYSARUM *foliis pinnatis, leguminibus articulatis, aculeatis, flexuoſis. caule diffuſo. Lin. Sp. Pl.* 750. *French* Honeyſuckle with winged Leaves, jointed prickly Pods which are waved, and a diffuſed Stalk. *Hedyſarum annuum, ſiliquâ aſperâ undulatâ intortâ. Tourn.* Annual *French* Honeyſuckle, with a rough, waved, writhed Pod.

5. HEDYSARUM *foliis binatis petiolatis, floralibus ſeſſilibus. Flor. Zeyl.* 291. *French* Honeyſuckle with two Leaves on a Foot Stalk, but thoſe with the Flowers ſitting cloſe to the Stalks. *Hedyſarum minus diphyllum, flore luteo. Sloan. Cat.* 73. Smaller two leaved *French* Honeyſuckle, with a yellow Flower.

6. HEDYSARUM *foliis ternatis, foliolis obovatis, floribus paniculatis terminalibus, leguminibus intortis.* *French* Honeyſuckle with trifoliate oval Leaves, Flowers growing in Panicles at the Ends of the Stalks, and intorted Pods. *Hedyſarum triphyllum fruticoſum, flore purpureo, ſiliquâ variè diſtortâ. Sloan. Cat.* 73. Three leaved ſhrubby *French* Honeyſuckle, with a purple Flower, and a variouſly diſtorted Pod.

7. HEDYSARUM *foliis ternatis ſubtus nervoſis, caule glabro fruticoſo floribus ſpicatis terminalibus.* Three leaved *French* Honeyſuckle, with Veins on their under Side, a ſmooth ſhrubby Stalk, with Flowers growing in Spikes at the Ends. *Hedyſarum triphyllum fruticoſum ſupinum, flore purpureo. Sloan. Cat.* Three leaved ſhrubby dwarf *French* Honeyſuckle, with a purple Flower.

8. HEDYSARUM *foliis ternatis, foliolis ovatis ſubtus ſericeis, floribus ſpicatis alaribus terminalibuſque.* Three leaved *French* Honeyſuckle, with oval Leaves ſitting on their under Side, and Flowers in Spikes from the Side and the End of the Stalks. *Hedyſarum triphyllum fruteſcens, foliis ſubrotundis & ſubtus ſericeis, flore purpureo. Houſt.* Three leaved ſhrubby *French* Honeyſuckle, with roundiſh Leaves, which are ſilky underneath, and a purple Flower.

9. HEDYSARUM *foliis ternatis, caulibus diffuſis villoſis, floribus ſpicatis terminalibus, calycibus villoſiſſimis.* Three leaved *French* Honeyſuckle, with diffuſed Stalks which are hairy, Flowers growing in Spikes at the Ends of the Branches, and very hairy Empalements. *Hedyſarum triphyllum humile, flore conglomerato calyce villoſo. Houſt.* Dwarf three leaved *French* Honey-ſuckle, with Flowers growing in Cluſters, and a hairy Cup.

10. HEDYSARUM *foliis ternatis, caulibus procumbentibus racemoſis, floribus laxè ſpicatis terminalibus, leguminibus contortis articulis quadrangularibus.* Three leaved *French* Honeyſuckle, with branching trailing Stalks, Flowers growing in looſe Spikes at the Ends of the Branches, and twiſted Pods with ſquare Joints. *Hedyſarum triphyllum procumbens, foliis rotundioribus & minoribus. ſiliquis tenuibus & intortis. Houſt.* Trailing three leaved *French* Honeyſuckle, with ſmaller and rounder Leaves, and narrow contorted Pods.

11. HEDYSARUM *foliis ternatis, foliolis obcordatis, caule erecto triangulo villoſo, racemis terminalibus, leguminibus articulatis incurvis.* *French* Honeyſuckle with trifoliate Leaves whoſe Lobes are Heart-ſhaped, a triangular upright hairy Stalk, Flowers growing in long Bunches at the Ends of the Branches, and jointed incurved Pods. *Hedyſarum triphyllum, caule triangulari, foliis mucronatis, ſiliquis tenuibus intortis. Houſt.* Three leaved *French* Honeyſuckle, with a triangular Stalk, pointed Leaves, and a narrow contorted Pod.

12. HEDYSARUM *foliis ternatis obcordatis, caule paniculato, leguminibus monoſpermis glabris.* *French* Honeyſuckle with trifoliate Heart-ſhaped Leaves, a paniculated Stalk, and ſmooth Pods containing one Seed. *Hedyſarum triphyllum, annuum, erectum, ſiliquis intortis, & ad extremitatem amplioribus. Houſt.* Three leaved annual upright *French* Honeyſuckle, with contorted Pods, which are broad at their Extremity.

13. HEDYSARUM *foliis ternatis, foliolis obverſè-ovatis, caule volubili, ſpicâ longiſſimâ reflexâ.* Three leaved *French* Honeyſuckle, with obverſe oval Lobes, a twining Stalk, and a very long reflexed Spike of Flowers. *Hedyſarum triphyllum Americanum ſcandens, flore purpureo.* Three leaved climbing *American French* Honeyſuckle, with a purple Flower.

14. HEDYSARUM *foliis ternatis obcordatis, caulibus procumbentibus villoſis, pedunculis unifloris.* Three leaved *French* Honeyſuckle with oval Heart-ſhaped Leaves, trailing hairy Stalks, and Foot Stalks having a ſingle Flower. *Hedyſarum procumbens, trifolii fragiferi folio. Hort. Elth.* 172. Trailing *French* Honeyſuckle, with Leaves like the Strawberry Trefoil.

15. HEDYSARUM *foliis ſimplicibus ovatis obtuſis. Hort. Cliff.* 449. *French* Honeyſuckle, with oval, obtuſe, ſingle Leaves. *Hedyſarum humile, capparidis folio maculato. Hort. Elth.* 170. Low *French* Honeyſuckle, with a ſpotted Caper Leaf.

16. HEDYSARUM *foliis ternatis ovato-lanceolatis, ſubtus villoſis, caule fruteſcente villoſo.* Trifoliate *French* Honeyſuckle, with oval Spear-ſhaped Leaves, hairy on their under Side, and a ſhrubby hairy Stalk. Quere, Whether this be not the *Hedyſarum foliis ternatis ſubovatis caule fruteſcente. Flor. Virg.* 174. Three leaved *French* Honeyſuckle, with oval Lobes and a ſhrubby Stalk.

17. HEDYSARUM *foliis ternatis, foliolo intermedio pedunculo longiore, racemis alaribus erectis longiſſimis.* *French* Honeyſuckle with trifoliate Leaves, the middle Lobe ſtanding on a longer Foot Stalk, and very long Bunches of Flowers coming from the Sides of the Stalks.

18. HEDYSARUM *foliis ſimplicibus lanceolatis obtuſis, caule fruticoſo ſpinoſo. Lin. Sp. Pl.* 745. *French* Honeyſuckle, with ſingle, Spear-ſhaped, obtuſe Leaves, and a prickly ſhrubby Stalk. *Alhagi Maurorum. Rauwolf.* 94. The *Alhagi* of the *Moors.*

19. HEDYSARUM *foliis ſimplicibus, cordato-oblongis integerrimis glabris.* *French* Honeyſuckle with ſingle, oblong, Heart-ſhaped Leaves, ſmooth and entire. *Onobrychis Zeylanica aurantii folio. Pet. Hort. Seic.* 247. Cockſhead of *Ceylon* with an Orange Leaf.

The 1ſt Sort has been long cultivated in the *Engliſh* Gardens, for Ornament. This grows naturally in *Italy*; there are two Varieties of this, one with a bright red, and the other a white Flower, which very rarely vary from one to the other; but as there is no other Difference but in the Colour of their Flowers, ſo they are ſuppoſed to be the ſame Species.

It is a biennial Plant, which flowers the ſecond Year, and ſoon after the Seeds are ripe, the Roots generally periſh: This ſends up ſeveral hollow, ſmooth Stalks, which branch out on each Side, leaning toward the Ground. Theſe are from 2 to 3 Feet high, and are garniſhed with winged Leaves, compoſed of 5 or 6 Pair of oval Lobes, terminated by an odd one; the Leaves are placed alternate, and from their Baſe come out Foot Stalks, 5 or 6 Inches long, ſuſtaining Spikes of beautiful red Flowers; theſe are ſucceeded by compreſſed jointed Pods, very rough, ſtanding erect; in each of the Joints, is lodged one Kidney-ſhaped Seed. This Sort flowers in *June* and *July*, and the Seeds ripen in *September*. The white is only a Variety of this, and as ſuch is ſometimes preſerved in Gardens.

They are propagated by ſowing their Seeds in *April*, in a Bed of light freſh Earth; and when the Plants come up, they ſhould be tranſplanted into other Beds of the like Earth, and in an open Situation, at about 6 or 8 Inches Diſtance from each other, leaving a Path between every 4 Rows, [illegible] go between them to hoe, and clear them from Weeds. In theſe Beds they may remain until *Michaelmas*, and then they may be tranſplanted into the large Borders of a Parterre or Pleaſure Garden, allowing them at leaſt 3 Feet Diſtance from other Plants, amongſt which they ſhould be interſperſed, to continue the Succeſſion of Flowers; where they will make a fine Appearance when blown, eſpecially the red Sort, which produces very beautiful Flowers.

As theſe Plants decay after they have perfected their Seeds, ſo there ſhould annually be a freſh Supply of Plants raiſed, where they are deſired, for the old Roots ſeldom continue longer. They are very proper Ornaments for large Borders, or to fill up Vacancies among Shrubs, but they grow too large for ſmall Borders, unleſs their Stalks are pruned off, leaving only 2 or 3 on each Plant; which, if kept upright with Sticks, will prevent their hanging over other Flowers. They are propagated for ſupplying the Markets with Plants, to adorn the *London* Gardens and Balconies, by the Gardeners in the Neighbourhood of *London*.

The 2d Sort is an annual Plant, which grows naturally in *Spain* and *Portugal*; the Leaves of this are narrow and oblong, 4 or 5 Pair being placed along the Midrib, with an odd one at the End; the Stalks are terminated by ſmall Spikes of purple Flowers, which are ſucceeded by ſmall rough Pods, ſhaped like thoſe of the former Sort. This Plant is preſerved in Botanick Gardens for Variety; it is propagated by Seeds, which ſhould be ſown the Beginning of *April*, in the Place where the Plants are to remain, and will require no other Culture but to thin them where too near, and keep them clean from Weeds. This flowers in *July*, and the Seeds ripen in Autumn.

The 3d Sort hath a perennial Root, which will abide many Years, if planted in a dry Soil. This is propagated by ſowing the Seeds in the Manner directed for the former; but when the Plants are come up two Inches high, they ſhould be tranſplanted where they are to remain for good; but if they are not too thick in the Seed Bed, they may be ſuffered to remain there until the following Autumn; at which Time they ſhould be carefully taken up, and tranſplanted into the Borders where they are deſigned to ſtand; for their Roots generally run down very deep, ſo that it is not ſafe to remove them often. This Plant produces its Flowers about the ſame Time of the Year as the former, and if the Seaſon proves favourable, perfects its Seeds in Autumn; and the Roots will abide in the open Air very well, reſiſting the ſevereſt Cold, provided they are planted in a dry Soil.

The 4th Sort is an annual Plant, which grows naturally in the *Levant*. This hath ſome Reſemblance of the firſt, but is much ſmaller; the Stalks riſe near a Foot high, and are garniſhed with winged Leaves, compoſed of 2 or 3 Pair of oval Lobes terminated by an odd one; the Flowers come out in Spikes at the Top of the Stalks, which are of a pale red, intermixed with a little blue. Theſe appear in *July*, and are ſucceeded by jointed Pods, waved on both Sides, forming an obtuſe Angle at each Joint; the Seeds ripen in the Autumn. This is propagated as the ſecond Sort, and is equally hardy.

The 5th Sort grows naturally in both *Indies*; the Seeds were ſent me from *La Vera Cruz*, by the late Dr. *Houſtoun*. This is an annual Plant, with a long Tap Root, which runs deep in the Ground, ſending out 1 or 2 Stalks, which riſe about 9 Inches high, the lower Part being garniſhed with oval Leaves by Pairs on each Foot Stalk, but the upper Part of the Stalk where the Flowers come out, is garniſhed with ſmall Leaves, ending in acute Points, ſitting cloſe to the Stalks, and at each of theſe is ſituated a ſingle ſmall yellow Flower, incloſed by the two Leaves. Theſe make but little Appearance, and are ſucceeded by oblong Pods, containing one Kidney-ſhaped Seed.

The 6th Sort was ſent me by the late Dr. *Houſtoun* from *La Vera Cruz*, where he found it growing naturally, as it alſo does in *Jamaica*. This is an annual Plant, which riſes with a ſhrubby Stalk upward of 4 Feet high, dividing into ſeveral Branches, garniſhed with oblong oval Leaves that are trifoliate, ſtanding on pretty long Foot Stalks, the middle Lobe ſtanding an Inch beyond the other two; the Branches are terminated by long looſe Panicles of purple Flowers, which are ſucceeded by narrow jointed Pods which are twiſted. Theſe Plants flower in *July*, and their Seeds ripen in the Autumn.

The two laſt mentioned are tender Plants, ſo their Seeds muſt be ſown in the Spring on a hot Bed; and when they are fit to remove, they ſhould be each planted in a ſeparate ſmall Pot, filled with light Earth, and plunged into a hot Bed, keeping them ſhaded from the Sun till they have taken new Root; then they muſt be treated as other tender Plants from hot Countries, always keeping them in the Stove or Glaſs Caſe, otherwiſe they will not flower or produce Seeds in *England*.

The 7th Sort grows naturally in *Jamaica*, from whence the Seeds were ſent me by the late Dr. *Houſtoun*. This is a ſhrubby Plant, which riſes about 5 Feet high, and divides into ſeveral Branches, garniſhed with trifoliate Leaves which are oval, the middle Lobe being much larger than the other two; the Stalks are terminated by long Spikes of ſmall purple Flowers, which are ſucceeded by narrow Pods, ſtrait on one Side, but jointed on the other.

The 8th Sort was ſent me from *La Vera Cruz*, by the late Dr. *Houſtoun*, who found it growing there naturally. This riſes with a ſhrubby Stalk 6 or 7 Feet high, dividing into ſeveral Branches, garniſhed with trifoliate oval Leaves, ſilky and white on their under Side, but of a pale green on their upper Side; the Flowers come out in long narrow Spikes from the Wings, and at the End of the Branches, ſitting cloſe to the Stalks; they are ſmall, of a bright purple Colour, and are ſucceeded by flat, ſmooth, jointed Pods, about one Inch long, each Joint having one Kidney-ſhaped Seed.

The two laſt Sorts will continue 2 or 3 Years, if the Plants are placed in the Bark Stove. They are propagated by Seeds, which muſt be ſown on a hot Bed, and the Plants treated as thoſe juſt before-mentioned; and in the Summer, when they have obtained Height, they ſhould be removed into the Bark Stove, where they ſhould conſtantly remain, allowing them a large Share of Air in warm Weather. Theſe Plants ſeldom flower till the ſecond Year, when they will produce Seeds which ripen in the Autumn.

The 9th Sort is an annual Plant, which grows naturally at *La Vera Cruz*. This ſeldom riſes more than 8 or 9 Inches high, ſending out ſeveral Branches from the Root, which are diffuſed and hairy; they are cloſely garniſhed with ſmall, oval, trifoliate Leaves, a little hoary. The Flowers grow in cloſe ſhort Spikes, they are purple, and have very hairy Empalements.

The 10th Sort grows naturally in *Jamaica*. This hath ligneous trailing Stalks, a Foot and a Half long, ſending out ſeveral Branches on each Side, garniſhed with ſmall, round, trifoliate Leaves, of a pale green Colour; the Flowers are produced in very looſe Spikes at the End of the Branches, they are ſmall, of a pale purpliſh Colour, and are ſucceeded by narrow twiſted Pods which are jointed, each Joint being four cornered, containing a ſingle ſmall compreſſed Seed.

The two laſt Sorts being annual, require the ſame Treatment as the 5th and 6th Sorts before-mentioned, with which Management they will flower and ripen their Seeds in this Country.

The 11th Sort is a ſhrubby Plant, which riſes with triangular Stalks, 5 or 6 Feet high, dividing into ſeveral Branches, garniſhed with Heart-ſhaped trifoliate Leaves, ending in acute Points; the Flowers are produced in very long Spikes at the End of the Branches, which are of a pale purple Colour, and are ſucceeded by narrow jointed Pods variouſly twiſted; the Seeds are ſmall and compreſſed.

This Plant grows naturally in *Jamaica*, from whence the Seeds were ſent me by the late Dr. *Houſtoun*. It will continue 3 or 4 Years, if treated in the Manner directed for the 7th and 8th Sorts, and will perfect its Seeds in this Country.

The 12th Sort is annual, the Seeds of it were ſent me from *Campeachy*. This hath a paniculated Stalk, which riſes about 2 Feet high, garniſhed with Heart-ſhaped trifoliate Leaves; the upper Part of the Stalk branches out into Panicles of Flowers of a pale purple Colour; theſe are ſucceeded by lunulated compreſſed Pods, which ſtand oblique to the Stalk, each containing one compreſſed Kidney-ſhaped Seed. This Sort is propagated by Seeds, and requires the ſame Treatment as the 5th and 6th Sorts.

The 13th Sort was ſent me from *La Vera Cruz*. This hath a twining Stalk, which gets round the Trees and Shrubs which grow near it, and climbs to the Height of 10 or 12 Feet, garniſhed with obverſe, oval, trifoliate Leaves, ſtanding on pretty long Foot Stalks; the Flowers are produced in very long Spikes, which are reflexed; they are of a dark purple Colour, and ſit cloſe to the Stalk. This is an abiding Plant, which requires a Stove to preſerve it in this Country, ſo the Plants ſhould be treated as the 7th and 8th Sorts.

The 14th Sort is an annual Plant, which grows naturally in both *Indies*. The Seeds of this were ſent me from the *Havannah* by the late Dr. *Houſtoun*, it hath trailing Branches near a Foot long; garniſhed with round trifoliate Leaves, a little indented at the Top, very like in Shape to thoſe of the Strawberry Trefoil; the Stalks and under Side of the Leaves are hairy; the Flowers are produced toward the End of the Branches, ſometimes ſingle, and at other Times two at a Joint, they are of a purple Colour and ſmall; theſe are ſucceeded by Pods about an Inch long, ſtrait on one Side, and jointed on the other. This flowers the End of *July*, and ſometimes perfects Seeds here.

The 15th Sort is a low annual Plant, having ſlender Stalks near a Foot long, their lower Part being garniſhed with ſingle oval Leaves, ſtanding on ſlender Foot Stalks; their upper Part is adorned with Flowers, which come out by Pairs above each other, to the End of the Stalk; they are but ſmall, and of a reddiſh yellow Colour; theſe are ſucceeded by jointed narrow Pods, which ſit cloſe to the Stalk, and are Sickle-ſhaped. The two laſt mentioned are annual Plants, which require the ſame Culture as the 5th and 6th Sorts.

The 16th Sort was ſent me by the late Dr. *Dale*, from *South Carolina*. This hath a perennial Root, from which ariſe 2 or 3 ſhrubby hairy Stalks near 2 Feet high, branching out on every Side near the Top, and garniſhed with oval, Spear-ſhaped, trifoliate Leaves, hairy on their under Side, ſtanding on ſhort Foot Stalks; the Flowers are produced at the End of the Branches in ſhort Spikes, they are of a purpliſh yellow Colour and ſmall; the Stalks of this Sort decay every Autumn, and new ones ariſe in the Spring. It is propagated by Seeds, which ſhould be ſown on a hot Bed in the Spring, and when the Plants are fit to remove, they ſhould be planted in ſeparate ſmall Pots, filled with light Earth, and plunged into a moderate hot Bed, obſerving to ſhade them until they have taken new Root; then they ſhould have a large Share of Air admitted to them in warm Weather, and in Summer they may be expoſed to the open Air, but in the Autumn they muſt be placed under a Frame to ſcreen them from Froſt; the following Spring ſome of theſe Plants may be ſhaken out of the Pots, and planted in a warm Border, where, if the Summer proves warm, they will flower; but theſe ſeldom perfect their Seeds, therefore 2 or 3 Plants ſhould be put into larger Pots, and plunged into a moderate hot

Bed, which will bring them early into flower; ſo that if the Glaſſes are kept over them in bad Weather, they will ripen their Seeds in Autumn, and the Roots will continue ſome Years, if ſcreened from Froſt in Winter.

The 17th Sort was ſent me with the laſt, by the ſame Gentleman from *South Carolina*. This hath a perennial Root and an annual Stalk, which grows erect about 2 Feet high, garniſhed with long trifoliate Leaves, rounded at their Baſe where broadeſt, and narrow all the Way to a Point; they are near 3 Inches and a half long, and half an Inch broad at their Baſe, of a light green and ſmooth; the 2 Side Lobes ſit pretty cloſe to the Stalk, but the middle one ſits on a Foot Stalk an Inch long; the Flowers are produced in long Spikes from the Wings of the Stalk, growing erect; the lower Part of the Spike is but thinly ſet with Flowers, but on the upper Part they are diſpoſed very cloſe; theſe are ſmall, and of a bright yellow Colour, ſitting very cloſe to the Stalks, and are ſucceeded by jointed Pods ſtrait on one Side.

This Plant is propagated by Seeds, and requires the ſame Treatment as the laſt mentioned, with which it will flower and produce ripe Seeds.

The 18th Sort grows naturally in *Syria*, where it is one of the Beauties of the Country. It riſes with ſhrubby Stalks about 3 Feet high, which branch out on every Side, and are garniſhed with ſingle Leaves, ſhaped like thoſe of the broad leaved Knot Graſs; they are very ſmooth, of a pale green Colour, and ſtand on ſhort Foot Stalks; under theſe Leaves come out Thorns, near an Inch long, of a reddiſh brown Colour; the Flowers come out from the Side of the Branches in ſmall Cluſters, they are of a purple Colour in the Middle, and reddiſh about the Rims; theſe are ſucceeded by Pods, ſtrait on one Side, and jointed on the other, bending a little in Shape of a Sickle. This Plant is at preſent rare in the *Engliſh* Gardens, it is propagated by Seeds, which will frequently lie a Year in the Ground before they vegetate, therefore ſhould be ſown in Pots filled with light Earth, and plunged into a moderate hot Bed; and if the Plants do not appear by the Beginning of *June*, the Pots ſhould be taken out of the Bed, and placed where they may have only the Morning Sun, keeping them clean from Weeds; and in the Autumn, they ſhould be plunged into an old Bed of Tanners Bark under a Frame, where they may be ſcreened from the Froſt and hard Rains in the Winter, and in Spring plunged into a freſh hot Bed, which will bring up the Plants: When theſe are fit to remove, they ſhould be each planted into a ſeparate ſmall Pot, filled with light Earth, and plunged into a very moderate hot Bed, ſhading them from the Sun till they have taken new Root, then they ſhould be gradually hardened to bear the open Air, into which they ſhould be removed in *June*, placing them in a ſheltered Situation, where they may remain till Autumn; when, if they are plunged into an old Tan Bed under a Frame, where, in mild Weather they may enjoy the free Air, and be protected from Froſt, they will ſucceed better than if placed in a Green-houſe, or tenderly treated. I have ſeen this Plant growing in the full Ground, in a very warm Border, where, by covering it in froſty Weather, it had endured two Winters, but a ſevere Froſt happening the third Winter, entirely killed it.

From this Shrub the *Perſian* Manna is collected, which is an Exudation of the nutritious Juice of the Plant. This Drug is chiefly gathered about *Tauris*, a Town in *Perſia*, where the Shrub grows plentifully. Sir *George Wheeler* found it growing in *Tinos*, and ſuppoſed it was an undeſcribed Plant. *Tournefort* found it in Plenty in many of the Plains in *Armenia* and *Georgia*, and made a particular Genus of it, under the Title of *Alhagi*.

The 19th Sort grows naturally in *India*, from whence the Seeds have been lately brought to *Europe*, and ſeveral Plants have been raiſed in the *Engliſh* Gardens; theſe have Leaves ſo like thoſe of the Orange Tree, as ſcarcely to be diſtinguiſhed while young; but as there are not any Plants here of a large Size, ſo I can give no further Account of this Sort at preſent.

HEDYSARUM Zeylanicum majus & minus. *See* Æſchynomene.

HEDYSARUM mimoſæ foliis. *See* Æſchynomene.

HELENIUM. *Lin. Gen. Pl.* 863. *Heleniaſtrum. Vaill. Act. R. Par.* 1720. Baſtard Sun Flower.

The *Characters* are,

It hath a Flower compoſed of ſeveral hermaphrodite Florets, which form the Diſk, and female half Florets, which compoſe the Rays. The hermaphrodite Florets are tubulous, and cut into 5 *Parts at the Brim; theſe have each* 5 *ſhort hairy Stamina, terminated by cylindrical Summits, with an oblong Germen, ſupporting a ſlender Style, crowned by a bifid Stigma. The Germen becomes an angular ſingle Seed, crowned by a ſmall* 5 *pointed Empalement. The female half Florets in the Border, have ſhort Tubes, and are ſtretched out on one Side like a Tongue to form the Ray; theſe are cut into* 5 *Segments at their Points, where they are broad. The female Flowers have no Stamina, but have an oblong Germen, which turns to a ſingle Seed, like thoſe of the hermaphrodite Flowers; theſe are all included in one common ſingle Empalement, which ſpreads open, and is cut into ſeveral Segments.*

The *Species* are,

1. HELENIUM *foliis lanceolatis-linearibus integerrimis glabris, pedunculis nudis unifloris.* *Helenium* with Spear-ſhaped narrow Leaves ſmooth and entire, and naked Foot Stalks with ſingle Flowers. *Heleniaſtrum folio longiore & anguſtiore. Vaill. Act. R. Par.* 1720. Baſtard Sun Flower with a longer and narrower Leaf.

2. HELENIUM *foliis lanceolatis acutis ſerratis, pedunculis brevioribus, calycibus multifidis.* *Helenium* with pointed Spear-ſhaped ſawed Leaves, ſhorter Foot Stalks, and a many pointed Empalement. *Heleniaſtrum folio breviore & latiore. Vaill. Act. R. S.* 1720. Baſtard Sun Flower with a broader and ſhorter Leaf.

Theſe Plants riſe to the Height of 6 or 7 Feet in good Ground; the Roots, when large, ſend up a great Number of Stalks, which branch toward the Top; thoſe of the firſt Sort are garniſhed with ſmooth Leaves, 3 Inches and a Half long, and half an Inch broad in the Middle, with entire Edges ſitting cloſe to the Stalks, and from their Baſe is extended a leafy Border along the Stalk, ſo as to form what was generally termed a winged Stalk, but *Linnæus* calls it a running Leaf; the upper Part of the Stalk divides, and from each Diviſion ariſes a naked Foot Stalk, about 3 Inches long, ſuſtaining one yellow Flower at the Top, ſhaped like a Sun Flower, but much ſmaller, having long Rays, jagged pretty deep into 4 or

5 Segments; theſe appear in *July*, and there is a Succeſſion of Flowers on the Plants till the Froſt puts a Stop to them.

The 2d Sort hath the Appearance of the firſt, but the Leaves are not 3 Inches long, and are more than an Inch broad in the Middle, ending in acute Points, and ſharply ſawed on their Edges. The Flowers ſtand on ſhorter Foot Stalks, growing cloſer together, for the Stalks of this do not branch near ſo much as thoſe of the other; they both flower at the ſame Seaſon.

There is alſo another Sort with Leaves as narrow as the firſt, which are acutely indented on the Edges. The Stalks branch at the Top, ſomewhat like thoſe of the firſt, but the middle Flowers have much ſhorter Foot Stalks than thoſe which branch on the Side, and the Foot Stalks are garniſhed with ſmall Leaves, almoſt to the Top; but I am not certain if this is a diſtinct Species, or only a Variety which has accidentally riſen from the Seeds of the other.

Theſe Plants are both of them Natives of *America*; the Seeds of both Sorts I have received from *Virginia* and *New England*, where they grow wild in great Plenty in the Woods, and other ſhady Places, where the Ground is moiſt. They may be propagated by Seeds, or by parting their Roots, but the latter is generally practiſed in this Country, becauſe they ſeldom perfect their Seeds here; but if the Seeds are procured from abroad, they ſhould be ſown the Beginning of *March* on a Border of light Earth; and if the Seeds ſhould not come up the firſt Year, the Ground ſhould not be diſturbed, becauſe they often remain a whole Year under Ground before the Plants appear, in which Caſe there is nothing more to be done, but to keep the Ground clear from Weeds, and wait until the Plants come up. When they appear, if the Seaſon proves dry, they muſt be often watered, which will greatly forward their Growth, and where the Plants come up too cloſe to each other, they ſhould be thinned, and tranſplanted out into Beds a Foot aſunder every Way, being careful to ſhade them until they have taken Root, as alſo to water them in dry Weather. In Autumn they may be tranſplanted where they are to remain, and the following Summer they will produce their Flowers, which will continue till the Froſt prevents them, and their Roots will abide many Years, and afford many Offsets, by which they may be increaſed.

The beſt Seaſon to tranſplant the old Roots, and to part them for Increaſe, is in *October*, when their Flowers are paſt, or the Beginning of *March*, juſt before they begin to ſhoot, but if the Spring ſhould prove dry, they muſt be duly watered, otherwiſe they will not produce many Flowers the ſame Year; theſe Plants ſhould not be removed oftener than every other Year, if they are expected to flower ſtrong; they delight in a Soil rather moiſt than dry, provided it be not too ſtrong, or holds the Wet in Winter; but if they are planted in a dry Soil, they muſt be often and plentifully watered in dry Weather, to make them produce Plenty of Flowers.

HELENIUM, Elecampane. *See* Inula.

HELIANTHEMUM. *Tourn. Inſt. R. H.* 248. *Tab.* 128. *Ciſtus. Lin. Gen. Pl.* 598. Dwarf *Ciſtus*, or Sun Flower.

The *Characters* are,

The Flower has a 3 *leaved Empalement, which is permanent, afterward covering the Seed Veſſel. It hath* 5 *roundiſh Petals, which ſpread open, with a great Number of erect Stamina, terminated by ſmall roundiſh Summits. In the Center is ſituated an oval Germen, ſupporting a ſingle Style, the Length of the Stamina, crowned by an obtuſe Stigma. The Germen becomes a roundiſh, or oval Capſule, of* 1 *Cell, opening in* 3 *Parts, filled with ſmall roundiſh Seeds.*

The *Species* are,

1. HELIANTHEMUM *caulibus procumbentibus ſuffruticoſis, foliis oblongis ſubpiloſis, ſtipulis lanceolatis.* Dwarf *Ciſtus* with trailing ſhrubby Stalks, oblong hairy Leaves, and Spear-ſhaped Stipulæ. *Helianthemum vulgare flore luteo. J. B.* 2. 15. Common Dwarf *Ciſtus* with a yellow Flower.

2. HELIANTHEMUM *caulibus procumbentibus ſuffruticoſis, ramoſiſſimis, ſpicis florum longioribus.* Dwarf *Ciſtus* with trailing ſhrubby Stalks full of Branches, and longer Spikes to the Flowers. *Helianthemum album Germanicum. Tab. Icon.* 1062. White *German* Dwarf *Ciſtus*.

3. HELIANTHEMUM *caulibus ſuffruticoſis piloſis, foliis lanceolatis obtuſis, ſpicis reflexis.* Dwarf *Ciſtus* with hairy ſhrubby Stalks, blunt Spear-ſhaped Leaves, and reflexed Spikes of Flowers. *Helianthemum foliis majoribus, flore albo. J. B.* 2. 16. Dwarf *Ciſtus* with larger Leaves and a white Flower.

4. HELIANTHEMUM *incanum, caulibus ſuffruticoſis erectis, foliis lanceolatis hirſutis.* Hoary Dwarf *Ciſtus* with erect ſhrubby Stalks, and hairy Spear-ſhaped Leaves. *Helianthemum ſaxatile, foliis & caulibus incanis, floribus albis, Appenini Montis. Mentz. Pug. Tab.* 8. Rock Dwarf *Ciſtus* of the *Apennines*, with hoary Stalks and Leaves, and white Flowers.

5. HELIANTHEMUM *caule procumbente non ramoſo, foliis linearibus incanis oppoſitis.* Dwarf *Ciſtus* with an unbranched trailing Stalk, and narrow hoary Leaves placed oppoſite. *Helianthemum folio thymi incano. J. B.* 2. 19. Dwarf *Ciſtus* with a hairy Thyme Leaf.

6. HELIANTHEMUM *caule ſuffruticoſo procumbente, foliis linearibus alternis, floribus auriculatis.* Dwarf *Ciſtus* with a ſhrubby trailing Stalk, very narrow Leaves placed alternate, and auriculated Flowers. *Helianthemum tenuifolium glabrum luteo flore, per humum ſparſum. J. B.* 2. 18. Smooth narrow leaved Dwarf *Ciſtus* with a yellow Flower, and trailing Stalks.

7. HELIANTHEMUM *caule ſuffruticoſo procumbente, foliis lanceolatis oppoſitis, pedunculis longioribus, calycibus hirſutis.* Dwarf *Ciſtus* with a ſhrubby trailing Stalk, Spear-ſhaped Leaves placed oppoſite, longer Foot Stalks to the Flowers, and hairy Empalements. *Helianthemum ſive Ciſtus humilis, folio ſampſuchi, capitulis valde hirſutis. J. B.* 2. 20. Dwarf *Ciſtus* with a Marjoram Leaf, and very hairy Heads.

8. HELIANTHEMUM *caule ſuffruticoſo procumbente, foliis linearibus oppoſitis, floribus umbellatis.* Dwarf *Ciſtus* with a ſhrubby trailing Stalk, very narrow Leaves placed oppoſite, and Flowers growing in an Umbel. *Helianthemum folio thymi floribus umbellatis. Tourn. Inſt.* 250. Dwarf *Ciſtus* with a Thyme Leaf and umbellated Flowers.

9. HELIANTHEMUM *caulibus procumbentibus ſuffruticoſis glabris, foliis ovato-lanceolatis oppoſitis, pedunculis longioribus.* Dwarf *Ciſtus* with ſhrubby trailing Stalks,

which are ſmooth, oval Spear-ſhaped Leaves placed oppoſite, and longer Foot Stalks to the Flowers. *Helianthemum Germanicum luteum Ciſti folio. Boerh.* Yellow *German* Dwarf *Ciſtus* with a Rock Roſe Leaf.

10. Helianthemum *caule lignoſo perenne, foliis radicalibus ovatis trinerviis tomentoſis caulinis glabris lanceolatis alternis.* Perennial Dwarf *Ciſtus* with a woody Stalk, whoſe lower Leaves are oval, woolly, and three veined, and thoſe on the Stalks ſmooth, Spear-ſhaped, and placed alternate. *Helianthemum plantaginis folio perenne. Tourn. Inſt.* 250. Perennial Dwarf *Ciſtus* with a Plaintain Leaf.

11. Helianthemum *caulibus ſeſſilibus ſuffruticoſis, foliis lanceolatis oppoſitis tomentoſis caule florali racemoſo.* Dwarf *Ciſtus* with very ſhort ſhrubby Stalks, woolly Spear-ſhaped Leaves placed oppoſite, and a branching Flower Stalk. *Helianthemum foliis polii montani. Tourn. Inſt.* 249. Dwarf *Ciſtus* with Leaves like Poley Mountain.

12. Helianthemum *caule ſuffruticoſo procumbente, foliis ovatis nervoſis, ſubtus incanis.* Dwarf *Ciſtus* with a ſhrubby trailing Stalk, and oval veined Leaves, white on their under Side. *Helianthemum ad nummulariam accedens. J. B.* 2. 20. Dwarf *Ciſtus* reſembling Moneywort.

13. Helianthemum *caule ſuffruticoſo, foliis lineari-lanceolatis oppoſitis ſubtus tomentoſis.* Dwarf *Ciſtus* with a ſhrubby Stalk, and narrow Spear-ſhaped Leaves placed oppoſite, woolly on their under Side. *Helianthemum lavendulæ folio. Tourn. Inſt.* 249. Dwarf *Ciſtus* with a Lavender Leaf.

14. Helianthemum *caule ſuffruticoſo erecto, foliis linearibus margine revolutis ſubtus incanis.* Dwarf *Ciſtus* with a ſhrubby erect Stalk, and narrow Leaves reflexed on their Edges, with their under Side hoary. *Helianthemum foliis Roriſmarini ſplendentibus, ſubtus incanis. Tourn. Inſt.* 250. Dwarf *Ciſtus* with ſhining Roſemary Leaves, hoary on their under Side.

15. Helianthemum *caulibus ſuffruticoſis procumbentibus, foliis oblongo-ovatis ſubhirſutis, petalis acuminatis reflexis.* Dwarf *Ciſtus* with trailing ſhrubby Stalks, oblong oval hairy Leaves, and acute-pointed reflexed Petals to the Flowers. *Helianthemum vulgare petalis florum peranguſtis. Hort. Elth.* 177. *Tab.* 145. Common Dwarf *Ciſtus* with narrow Petals to the Flowers.

16. Helianthemum *caule ſuffruticoſo erecto, foliis lanceolatis incanis glabris caule florali ramoſo.* Dwarf *Ciſtus* with a ſhrubby upright Stalk, hoary Spear-ſhaped Leaves, which are ſmooth, and branching Flower Stalks. *Helianthemum Luſitanicum, mari folio incano, flore luteo. Tourn. Inſt.* 250. *Portugal* Dwarf *Ciſtus* with a hoary Marum Leaf, and a yellow Flower.

17. Helianthemum *caule ſuffruticoſo, foliis oblongo-ovatis oppoſitis, ſummis linearibus alternis.* Dwarf *Ciſtus* with a ſhrubby Stalk, oblong oval Leaves placed oppoſite, thoſe toward the Top being narrow and alternate. *Helianthemum ampliore folio, flore roſeo. Sherard. Act. Phil. N.* 383. Dwarf *Ciſtus* with a larger Leaf, and Roſe-coloured Flower.

18. Helianthemum *caule herbaceo hirſuto, foliis lanceolato-linearibus piloſis, pedunculis longioribus.* Dwarf *Ciſtus* with an herbaceous Stalk, which is hairy, narrow Spear-ſhaped hairy Leaves, and longer Foot Stalks to the Flowers. *Helianthemum flore maculoſo. Col. Ecphr.* 2. p. 78. Dwarf *Ciſtus* with a ſpotted Flower.

19. Helianthemum *caule herbaceo, foliis ſubovatis piloſis, flore fugaci.* Dwarf *Ciſtus* with an herbaceous Stalk, hairy oval Leaves, and a fugacious Flower. *Helianthemum annuum humile, foliis ſubovatis, flore fugaci. Allion.* Annual Dwarf *Ciſtus* with oval Leaves and a fugacious Flower.

20. Helianthemum *caule herbaceo erecto, foliis lanceolatis oppoſitis, floribus ſolitariis, capſulis maximis.* Dwarf *Ciſtus* with an erect herbaceous Stalk, Spear-ſhaped Leaves placed oppoſite, Flowers growing ſingly, and very large Capſules. *Helianthemum Ledi folio. Tourn. Inſt.* 249. Dwarf *Ciſtus* with a Ledon Leaf.

21. Helianthemum *caule herbaceo ramoſo, foliis oblongo-ovatis oppoſitis, ſummis alternis, floribus ſolitariis.* Dwarf *Ciſtus* with a branching herbaceous Stalk, oblong oval Leaves placed oppoſite; thoſe toward the Top growing alternate, and ſolitary Flowers. *Helianthemum ſalicis folio. Tourn. Inſt.* 249. Dwarf *Ciſtus* with a Willow Leaf.

22. Helianthemum *foliis faſciculatis. Royen.* Dwarf *Ciſtus* with Leaves growing in Bunches.

23. Helianthemum *caule fruticoſo ſucculento, foliis ovatis carnoſis, floribus racemoſis.* Dwarf *Ciſtus* with a ſhrubby ſucculent Stalk, oval fleſhy Leaves, and branching Flowers. *Helianthemum fruteſcens portulacæ folio. Plum. Cat.* Shrubby Dwarf *Ciſtus* with a Purſlain Leaf.

24. Helianthemum *caule herbaceo procumbente, foliis ovatis tomentoſis ſeſſilibus.* Dwarf *Ciſtus* with an herbaceous trailing Stalk, and oval woolly Leaves ſitting cloſe to the Branches. *Helianthemum Alpinum, folio piloſellæ minoris Fuchſii. J. B.* 2. 18. Hoary Dwarf *Ciſtus* of the *Alps,* with leſſer Cats Foot Leaves.

The 1ſt Sort grows naturally on the chalky Hills and Banks, in many Parts of *England*; the Stalks of this Plant are ligneous and ſlender, trailing on the Ground, extending themſelves near a Foot each Way; theſe are garniſhed with ſmall oblong Leaves, of a dark green on their upper Side, but of a grayiſh Colour on their under. The Flowers are produced at the End of the Stalks, in looſe Spikes; they are compoſed of 5 deep yellow Petals, which ſpread open in the Day, but ſhut cloſe in the Evening; theſe appear in *June* and *July*, and are ſucceeded by roundiſh Capſules, incloſing many angular Seeds, which ripen in *Auguſt* and *September*, and the Roots laſt ſeveral Years.

The 2d Sort grows naturally in *Germany*; the Stalks of this are much larger, and extend farther than thoſe of the firſt; the Leaves are longer, and are hoary, there are 3 acuminated Stipulæ at each of the lower Joints, which are erect. The Spikes of Flowers are much longer than thoſe of the former, and the Flowers are white and larger. The Empalement of the Flowers are hairy and whitiſh; theſe Differences are laſting from Seeds.

The 3d Sort grows naturally in the South of *France*, in *Italy*, and *Germany*. The Stalks of this grow more erect than either of the former, and are more ligneous. The Joints are farther aſunder; the Leaves are longer and hairy; the Spikes of Flowers are generally reflexed; they are white, and the Size of thoſe of the ſecond; the Stipulæ of this are very narrow.

The 4th Sort grows naturally on the *Apennine* Mountains; the Stalks are more erect than thoſe of the third. The Leaves are not ſo long, the Stipulæ are very ſmall, and the whole Plant is very hoary. The Flowers are white, and the Spikes ſhorter and more compact than either of the former.

The 5th Sort grows naturally in the South of *France*, in *Spain*, and *Iſtria*, from the laſt Country I have received the Seeds; this hath low trailing Stalks, which are ligneous, but ſeldom branch, and are not more than 4 or 5 Inches long. The leaves are narrow and hoary, and have no Stipulæ at their Baſe. The Flowers are white, and are in ſmall Cluſters at the End of the Stalks; this Sort ſeldom continues longer than 2 Years.

The 6th Sort hath trailing ſhrubby Stalks, which extend a Foot in Length, and are garniſhed with very narrow ſmooth Leaves placed alternate, but thoſe ſhort Stalks near the Root, which do not flower, have ſhorter and finer Leaves growing in Cluſters; theſe have no Stipulæ at their Baſe. The Flowers are placed thinly toward the End of the Branches, they are yellow and auriculated; this Sort grows in the South of *France* and *Italy*.

The 7th Sort hath very long trailing ligneous Stalks, garniſhed with Spear-ſhaped Leaves, placed oppoſite, which are very hairy, and gray on their under Side, having at their Baſe 3 long narrow Stipulæ. The Spikes of Flowers are near a Foot in Length, but grow thinly, they are large, and of a deep yellow Colour, with very hairy Empalements; this grows naturally in the South of *France*, and *Spain*.

The 8th Sort hath very ſhrubby crooked Stalks, covered with a purpliſh brown Bark like the common Heath. The Branches are ſlender, and garniſhed with narrow ſtiff Leaves, like thoſe of Thyme, which ſtand oppoſite, having no Stipulæ at their Baſe. The Flowers are produced on naked Foot Stalks, which terminate the Branches in a Sort of Umbel, they are of a pale yellow Colour, and a little ſmaller than thoſe of the common Sort; this grows naturally on the Sands near *Fontainbleau* in *France*.

The 9th Sort grows naturally in *Germany*, from whence the Seeds were ſent to the late Dr. *Boerhaave*, in whoſe curious Garden near *Leyden*, I gathered the Seeds; this ſends out from a ligneous Root, a great Number of trailing Stalks, which extend more than a Foot each Way, and are ſmooth, with a dark brown Bark, garniſhed with oval Spear-ſhaped ſmooth Leaves, placed oppoſite, having at their Baſe 3 Spear-ſhaped Stipulæ. The Flowers are large, yellow, and grow in ſhort Cluſters at the End of the Branches; this always continues the ſame from Seeds.

The 10th Sort grows naturally in *Spain*, from whence I received it; this hath a ſhort thick woody Stalk, from which come out ſeveral ſhort Side Branches, garniſhed with oval woolly Leaves, having three longitudinal Veins. The Flower Stalk which ariſes from the main Stem, grows about 9 Inches high, having 2 or 3 narrow Leaves placed alternate. The Flowers are produced on pretty long Pedicles toward the Top of the Stalk, and have very ſmooth Empalements.

The 11th Sort was ſent me from *Verona*, where it grows naturally; this hath a low ſhrubby Stalk, from which come out a few ſhort Branches, garniſhed with ſmall woolly Spear-ſhaped Leaves, placed oppoſite. The Flower Stalk riſes about 6 Inches high, and branches toward the Top, where the Flowers are produced on pretty long Foot Stalks; they are white, and ſmaller than thoſe of the common Sort.

The 12th Sort hath long ſhrubby Stalks, which trail on the Ground, and divide into many Branches, garniſhed with oval veined Leaves of a light green on their upper Side, but grayiſh below, with three narrow erect Stipulæ at their Baſe. The Flowers are pretty large, white, and grow in Cluſters at the End of the Branches.

The 13th Sort hath ſhrubby Stalks, which grow pretty upright, garniſhed with narrow Spear-ſhaped Leaves, placed oppoſite, woolly on their under Side, with 3 very narrow Stipulæ growing at their Baſe. The Flowers are white, growing in long Spikes at the End of the Branches; this grows naturrally in the South of *France*.

The 14th Sort hath an erect ſhrubby Stalk, which ſends out many Side Branches, whoſe Joints are pretty cloſe; they are garniſhed with very narrow Leaves, placed oppoſite, whoſe Borders are reflexed; their upper Side is of a lucid green, and their under Side hoary. The Flowers are pretty large, white, and grow in ſmall Cluſters at the End of the Branches; this grows naturally in *Spain*, from whence the Seeds were ſent me.

The 15th Sort was found by Mr. *Edmund Du Bois*, near *Croydon*, in *Surry*, and was at firſt ſuppoſed to be only an accidental Variety of the common Sort, but the Seeds always produce the ſame. I have cultivated it above 30 Years, and never have found it vary; it is very like the common Sort, but the Leaves are hairy. The Petals of the Flowers are Star-pointed, and ſmaller than thoſe of the common Sort.

The 16th Sort hath upright ſhrubby Stalks, which riſe a Foot and a half high, ſending out Branches the whole Length, garniſhed with ſmall Spear-ſhaped ſilvery Leaves, placed oppoſite, and ſmooth. The Flower Stalks branch, and the Flowers, which are white, are produced in ſhort Spikes at the End of the Branches.

The 17th Sort was found growing naturally by the late Dr. *William Sherrard*, near *Smyrna*, who ſent the Seeds to *England*; this hath ſhrubby Stalks, which do not trail on the Ground, garniſhed with oblong oval Leaves placed oppoſite, but thoſe toward the Top are narrow, and placed alternate. The Flowers are produced at the End of the Branches in long looſe Spikes, they are of a Roſe Colour, and the Size of thoſe of the common Sort.

The 18th Sort is annual; this grows naturally in *France*, *Spain*, *Italy*, and in *Jerſey*, where the late Dr. *William Sherrard* found it, and ſent the Seeds to *England*; this hath a branching herbaceous Stalk, which riſes 4 or 5 Inches high, garniſhed with narrow Spear-ſhaped Leaves, placed oppoſite, which are covered with Hairs, thoſe on the upper Part of the Stalks are placed alternate, and are narrower. The Flowers are produced in looſe Spikes at the End of the Branches, ſtanding on long Foot Stalks, they are ſmall, and compoſed of 5 yellow Petals, with a dark purple Spot at the Baſe of each; theſe Flowers are very fugacious, for they open early in the Morning, and their Petals drop off in a few Hours after, ſo that by ten of the Clock the Flowers are all fallen.

The 19th Sort grows naturally on Mount *Baldus*, from whence the Seeds were ſent me; this is an annual Plant, which ſends out many herbaceous Stalks from the Root, garniſhed with oval Leaves which are hairy. The Flowers are produced in looſe Spikes at the End of the Branches, they are of a pale yellow Colour, and very fugacious, ſeldom laſting two Hours before the Petals fall off; there is another Variety of this which grows about *Verona*, with upright Stalks.

The 20th Sort grows naturally in the South of *France* and *Italy*, and was found by the late Dr. *William Sherrard*, growing near *Smyrna*, who ſent the Seeds to *England* and *Holland* by a new Title, ſuppoſing it to be a different Plant, but when it was here cultivated, it proved to be the ſame with that growing in the South of *France*, for this Plant puts on different Appearances, according to the Soil and Situation where it grows; for, in a good Soil, where the Plants ſtand ſingle, and are not injured by Weeds, they will riſe near a Foot and a Half high, the Leaves will be two Inches and a Half long, and near half an Inch broad in the Middle; but in a poor Soil, or where the Plants ſtand too cloſe, or are injured by Weeds, or neighbouring Plants, they do not riſe more than half that Height. The Leaves are much narrower, and the Seed Veſſels not half ſo large, ſo that any Perſon finding theſe Plants in two different Situations, may be deceived, and take them for different Species, but when they are cultivated in a Garden in the ſame Soil and Situation, they do not differ in any Particular. This is an annual Plant, which periſhes ſoon after the Seeds are ripe.

The 21ſt Sort is an annual Plant, which grows narally in *Spain* and *Portugal*; this hath branching Stalks, which riſe a Foot high, garniſhed with oval oblong Leaves, placed oppoſite on the lower Part of the Stalk, but on the upper Part they are alternate and narrow, a ſingle Leaf being placed between each Flower, which occaſions the Title of Solitary Flowers, for they grow in looſe Spikes at the End of the Branches, in the ſame Manner as the other Species.

The 22d Sort was ſent me by Dr. *Adrian Van Royen*, who received the Seeds from the *Cape of Good Hope*, This riſes with a ſhrubby Stalk about 9 Inches high, garniſhed with very narrow fine Leaves, growing in Cluſters; the Flowers come out from the Side and at the End of the Branches, ſtanding on ſlender Foot Stalks; they are of a pale Straw Colour, and very fugacious, ſeldom continuing longer than two Hours before the Petals fall off. This ſeldom continues longer than two Years.

The 23d Sort was ſent me from *Campeachy*. This hath a ſhrubby ſucculent Stalk, which riſes near 3 Feet high, garniſhed with oval, fleſhy, ſucculent Leaves, like thoſe of Purſlain, which are placed alternate; the Flower Stalks ariſe from the main Stem, are naked and near two Feet high, branching out on each Side in ſmaller Foot Stalks, which are again branched into many ſmaller, each ſuſtaining a ſmall Roſe-coloured Flower.

The 24th Sort grows naturally about *Kendal* in *Weſtmoreland*, and in ſome Parts of *Lancaſhire*, upon rocky Situations. This hath trailing herbaceous Stalks, which ſeldom extend more than 3 or 4 Inches, garniſhed with oval Leaves, which are very woolly, and ſit cloſe to the Branches; the Flowers are produced at the upper Part of the Branches, they are white and ſmall, ſo make no great Appearance.

All the perennial Sorts of Dwarf *Ciſtus* (except the twenty-third) are hardy, ſo will thrive in the open Air in *England*; they are propagated by Seeds, which may be ſown in the Places where the Plants are to remain, and will require no other Care but to keep them clean from Weeds, and thin them where they are too cloſe, always obſerving to leave thoſe Sorts at a farther Diſtance, whoſe Stalks trail on the Ground, and grow to the greateſt Length. Theſe Plants will continue ſeveral Years, eſpecially in a poor dry Soil, but in rich Ground or moiſt Situations, they ſeldom laſt long; but as they ripen Seeds in Plenty, ſo they may be eaſily repaired. They all flower about the ſame Time as the common Sort, and their Seeds ripen in Autumn.

The annual Sorts may be propagated with as great Facility, for if their Seeds are ſown on a Bed of common Earth in *April*, the Plants will come up in *May*, and require no other Culture, but to thin them where too cloſe, and keep them clear from Weeds. This will flower in *July*, and the Seeds ripen in the Autumn. The 22d Sort will thrive in the full Ground in the ſame Manner as the other, but unleſs the Summer proves favourable, the Seeds will not ripen: The Roots have ſtood through the Winter when the Seaſon has proved mild, without any Shelter, and have flowered the following Summer.

The 23d Sort grows naturally in the warm Parts of *America*. Father *Plumier* diſcovered it firſt in ſome of the *French* Iſlands, and Dr. *Houſtoun* found it growing plentifully about *Campeachy*. This Sort is propagated by Seeds which ſhould be ſown on a hot Bed in the Spring; and when the Plants are fit to remove, they ſhould be each planted in a ſmall Pot filled with light, ſandy, undunged Earth, and plunged into a moderate hot Bed of Tanners Bark, and treated as other tender Plants from the ſame Country; in the Autumn they muſt be placed in a warm Stove, and the ſecond Year the Plants will flower, but they have not as yet produced Seeds in *England*.

The 24th Sort requires a ſhady Situation, otherwiſe it will not thrive here.

HELIANTHUS. *Lin. Gen. Pl.* 877. *Corona ſolis. Tourn. Inſt. R. H.* 489. *Tab.* 279. Sun Flower; in *French*, *Soleil.*

The *Characters* are,

It hath a compound radiated Flower, the Border or Rays being compoſed of female half Florets which are barren, and the Diſk of hermaphrodite Florets, which are fruitful; theſe are contained in 1 *common ſcaly Empalement, whoſe Scales are broad at their Baſe, pointed at their Ends, and expand. The hermaphrodite Florets are cylindrical, ſwelling at their Baſe, and cut at the Brim into* 5 *acute Segments which ſpread open; theſe have* 5 *Stamina curved at Bottom, and as long as the Tube, terminated by tubulous Summits. The Germen, which is ſituated at the Bottom* *of the Tube, ſupports a ſlender Style the Length of the Tube, crowned by a reflexed Stigma divided in* 2 *Parts; the Germen, becomes an oblong blunt four cornered Seed. The femal half Florets, which compoſe the Border, are ſtretched out on one Side like a Tongue, which is long and entire; theſe have a Germen in the Bottom, but no Style or Stamina, and are not fruitful.*

The *Species* are,

1. HELIANTHUS *foliis omnibus cordatis, nervis ponè baſin unitis, extrorſum denudatis. Lin. Sp. Pl.* 904. Sun Flower whoſe Leaves are all Heart-ſhaped, Veins uniting behind at the Baſe, but toward the Border naked. *Corona ſolis. Tabern. Icon.* 763. *Helenium Indicum maximum. C. B. P.* 276. Greateſt *Indian* Sun Flower, commonly called annual Sun Flower.

2. HELIANTHUS *foliis inferioribus cordatis, nervis ponè baſin unitis denudatis, ſuperioribus ovatis. Lin. Sp. Pl.* 905. Sun Flower whoſe under Leaves are Heart-ſhaped, Veins united behind at their Baſe, and the upper Leaves oval. *Corona ſolis minor fœmina. Tabern. Icon.* 764. Leſſer female Sun Flower, commonly called perennial Sun Flower.

3. HELIANTHUS *foliis ovato-cordatis, nervis intra folium unitis. Lin. Sp. Pl.* 905. Sun Flower with oval Heart-ſhaped Leaves, whoſe Nerves unite in the Leaf. *Corona ſolis parvo flore tuberoſâ radice. Tourn. Inſt.* 489. Sun Flower with a ſmall Flower and a tuberous Root, commonly called *Jeruſalem* Artichoke; in *French*, *Taupinambours*.

4. HELIANTHUS *radice fuſſiformi. Hort. Cliff.* 420. Sun Flower with a Spindle-ſhaped Root. *Corona ſolis latifolia altiſſima. Tourn. Inſt.* 489. Talleſt broad-leaved Sun Flower.

5. HELIANTHUS *foliis lanceolatis ſcabris, caule ſtricto. infernè glabro. Lin. Sp. Pl.* 905. Sun Flower with rough Spear-ſhaped Leaves, a ſlender Stalk, ſmooth toward the Bottom. *Chryſanthemum Virginianum altiſſimum anguſtifolium puniceis caulibus. Mor. Hiſt.* 3. p. 24. Talleſt *Virginia Chryſanthemum*, with a narrow Leaf and purple Stalks.

6. HELIANTHUS *foliis oppoſitis ſeſſilibus ovato-oblongis trinerviis, paniculâ dichotomâ. Lin. Sp. Pl.* 906. Sun Flower with oblong, oppoſite, oval Leaves, having three Veins, and ſitting cloſe to the Stalk, and a dichotomous Panicle. *Chryſanthemum Virginianum repens, foliis aſperis binatim ſeſſilibus acuminatis. Mor. Hiſt.* 3. p. 22. Creeping *Virginian Chryſanthemum*, with rough pointed Leaves, ſitting cloſe by Pairs.

7. HELIANTHUS *foliis lanceolatis oppoſitis, ſupernè ſcabris, infernè trinerviis, caule dichotomo ramoſo.* Sun Flower with Spear-ſhaped Leaves placed oppoſite, whoſe upper Surface is rough, the under having three Veins, and a divided Stalk. *Corona ſolis trachelii folio, radice repente. Tourn. Inſt.* 490. Sun Flower with a Throatwort Leaf, and a creeping Root.

8. HELIANTHUS *caule ramoſiſſimo, foliis lanceolatis ſcabris, inferioribus oppoſitis, ſummis alternis petiolatis, calycibus folioſis.* Sun Flower with a very branching Stalk, rough Spear-ſhaped Leaves placed oppoſite at Bottom, but alternate toward the Top, having Foot Stalks, and leafy Empalements. *Corona ſolis trachelii folio tenuiore, calyce floris foliato. Act. Phil.* N° 412. Sun Flower with a narrow Throatwort Leaf, and a leafy Flower Cup.

9. HELIANTHUS *foliis ovatis crenatis trinerviis ſcabris, ſquamis calycinis erectis longitudine diſci. Flor. Virg.* 103. Sun Flower with oval, rough, crenated Leaves, having 3 Nerves, the Scales of the Empalement being erect, and as long as the Diſk of the Flower. *Corona ſolis Caroliniana, parvis floribus, folio trinervi amplo aſpero, pediculo alato. Martyn. Cent.* 1. 20. *Carolina* Sun Flower, with ſmall Flowers, large rough Leaves having three Veins, and a winged Foot Stalk.

10. HELIANTHUS *caule infernè lævi, foliis lanceolato-cordatis, radiis decapetalis. Lin. Sp. Pl.* 905. Sun Flower, with a Stalk ſmooth on the upper Side, Heart Spear-ſhaped Leaves, and 10 Petals in the Rays.

All theſe Species of Sun Flowers are Natives of *America*, from whence we are often ſupplied with new Kinds; and it is very remarkable, that there is not a ſingle Species of this Genus that is *European*; ſo that before *America* was diſcovered, we were wholly unacquainted with theſe Plants. But although they are not originally of our own Growth, yet are they become ſo familiar with our Climate, as to thrive and increaſe full as well as if they were in their native Country (ſome of the very late flowering Kinds excepted, which require a longer Summer than we generally enjoy, to bring them to Perfection;) and many of them are now ſo plentiful in *England*, that Perſons unacquainted with the Hiſtory of theſe Plants, would imagine them at leaſt to have been Inhabitants of this Iſland many hundred Years; particulary the *Jeruſalem* Artichoke, which, though it doth not produce Seeds in our Climate, yet doth ſo multiply by its knobbed Roots, that, when once well fixed in a Garden, it is not eaſily to be rooted out.

The firſt Sort is annual, and ſo well known as to require no Deſcription. There are ſingle and double Flowers of two different Colours, one of a deep yellow, and the other of a Sulphur Colour; but theſe vary, ſo are not worthy to be mentioned as different. They are eaſily propagated by Seeds, which ſhould be ſown in *March*, on a Bed of common Earth; and when the Plants come up, they muſt be thinned where too cloſe, and kept clean from Weeds; when the Plants are grown 6 Inches high, they may be taken up with Balls of Earth to their Roots, and planted into the large Borders of the Pleaſure Garden, obſerving to water them till they have taken new Root, after which they will require no other Care, but to keep them clear from Weeds.

In *July* the great Flowers on the Tops of the Stems will appear, among which, the beſt and moſt double Flowers of each Kind ſhould be preſerved for Seeds; for thoſe which flower later upon the Side Branches are neither ſo fair, nor do they perfect their Seeds ſo well, as thoſe which are firſt in flower: When the Flowers are quite faded and the Seeds are formed, you ſhould carefully guard the Heads from the Sparrows, which will otherwiſe devour moſt of the good Seeds; and about the Beginning of *October*, when the Seeds are ripe, you ſhould cut off the Heads with a ſmall Part of the Stem, and hang them up in a dry airy Place for about a Month, by which Time the Seeds will be perfectly dry and hard; when you may eaſily rub them out, and put them up in Bags or Papers, preſerving them from Vermin until the Seaſon for ſowing them.

The Seeds of this Sort of Sun Flower are excellent Food for domeſtic Poultry, therefore where a Quantity of it can be ſaved, it will be of great Uſe, where there are Quantities of theſe Fowls.

The other perennial Sorts rarely produce Seeds in *England*, but moſt of them increaſe very faſt at their Roots, eſpecially the creeping rooted Kinds, which ſpread too far for ſmall Gardens. The 2d Sort, which is the moſt common in the *Engliſh* Gardens, is the largeſt and moſt valuable Flower, and is a very proper Furniture for large Borders in great Gardens, as alſo for Boſquets of large growing Plants, or to intermix in ſmall Quarters with Shrubs, or in Walks under Trees, where few other Plants will thrive; it is alſo a great Ornament to Gardens within the City, where it grows in Defiance of the Smoke, better than moſt other Plants; and for its long Continuance in flower, deſerves a Place in moſt Gardens, for the Sake of its Flowers for Baſons, *&c.* to adorn Halls and Chimnies in a Seaſon when we are at a Loſs for other Flowers. It begins flowering in *July*, and continues until *October*.

The 3d, 4th, 5th, 6th, and 7th Sorts, may alſo have a Place in ſome large Borders of the Garden, for the Variety of their Flowers; which, though not ſo fair as thoſe of the common Sort, yet will add to the Diverſity; and as many of them are late Flowerers, ſo we may continue the Succeſſion of Flowers longer in the Seaſon.

Theſe Sorts are all of them very hardy, and will grow in almoſt any Soil or Situation; they are propagated by parting their Roots into ſmall Heads, which in one Year's Time will ſpread and increaſe greatly. The beſt Seaſon for this Work is in the Middle of *October*, ſoon after the Flowers are paſt, or very early in the Spring, that they may be well rooted before the Droughts come on; otherwiſe their Flowers will be few in Number, and not near ſo fair, and by this Means their Roots will be weak; but if they are planted in *October*, you will ſave the Trouble of watering them; their Roots being ſurely fixed before the dry Weather, they will need no other Trouble than to clear them from Weeds.

The *Jeruſalem* Artichoke is propagated in many Gardens for the Roots, which are by ſome People as much eſteemed as Potatoes; but they are more watery and flaſhy, and are very ſubject to trouble the Belly by their windy Quality, which hath brought them almoſt into Diſuſe.

Theſe are propagated by planting the ſmaller Roots, or the larger ones cut into Pieces, obſerving to preſerve a Bud to each ſeparate Piece, either in the Spring or Autumn, allowing them a good Diſtance for their Roots will greatly multiply; the Autumn following, when their Stems decay, the Roots may be taken up for Uſe. Theſe ſhould be planted in ſome remote Corner of the Garden, for they are very unſightly while growing, and their Roots are apt to over-run whatever grows near them, nor can they be eaſily deſtroyed when they are once well fixed in a Garden.

The other Species which have been ranged under this Genus by *Tournefort* and others, are now removed to the following Genera, under which Titles they may be found.

Corona Solis. *See* { Coreopſis.
Helenium.
Rudbeckia.
Silphium.

HELICTERES. *Lin. Gen. Pl.* 913. *Iſora. Plum. Nov. Gen.* 34. *Tab.* 37. Screw Tree.

The *Characters* are,

The Flower has a coriaceous Empalement of 1 *Leaf, which is narrow at Bottom, but ſpreads open at the Top, where it is indented in* 5 *Parts. The Flower hath* 5 *oblong equal Petals, longer than the Empalement to which they are fixed. It hath* 10 *ſhort Stamina at the Baſe of the Germen, terminated by oblong Summits, and* 5 *Nectaria ſurrounding the Germen, which have the Appearance of Petals. The Style is very long, ſlender, and ſupports the Germen at the Top, which is roundiſh, and crowned by an acute Stigma. The Germen turns to a twiſted ſpiral Fruit with one Cell, incloſing many Kidney-ſhaped Seeds.*

The *Species* are,

1. HELICTERES *foliis cordato-ovatis ſerratis, ſubtus tomentoſis, fructu tereti contorto. Helicteres* with oval Heart-ſhaped Leaves which are ſawed and woolly on their under Side, and a taper twiſted Fruit. *Iſora althææ foliis, fructu longiore & anguſtiore. Plum. Nov. Gen.* 24. Screw Tree with Marſhmallow Leaves, and a longer and narrower Fruit.

2. HELICTERES *foliis cordatis acuminatis ſerratis, ſubtus tomentoſis, fructu brevi contorto. Helicteres* with Heart-ſhaped, pointed, ſawed Leaves, woolly on their under Side, and a ſhort twiſted Fruit. *Iſora althææ foliis, fructu breviore & craſſiore. Plum. Nov.* 34. Screw Tree with a Marſhmallow Leaf, and a ſhorter and thicker Fruit.

3. HELICTERES *caule arboreo villoſo, foliis cordatis crenatis nervoſis ſubtus tomentoſis fructu ovato contorto villoſiſſimo. Helicteres* with a Tree-like hairy Stalk, Heart-ſhaped, nervous, crenated Leaves, woolly on their under Side, and an oval, twiſted, very hairy Fruit. *Iſora althææ folio ampliſſimo, fructu craſiſſimo & villoſo. Edit. prior.* Screw Tree with a very large Marſhmallow Leaf, and a very thick hairy Fruit.

The 1ſt Sort grows naturally in the *Bahama Iſlands*, from whence I received the Seeds. This riſes with a ſhrubby Stalk 5 or 6 Feet high, ſending out ſeveral lateral Branches, covered with a ſoft yellowiſh Down, and garniſhed with Heart-ſhaped Leaves 4 Inches long, and 2 and a Half broad, ſawed on their Edges, and woolly on their under Side, ſtanding on long Foot Stalks; at the upper Part of the Branches the Flowers come out oppoſite to the Leaves, on ſlender Foot Stalks which are jointed; theſe are compoſed of 5 oblong white Petals, and in the Center ariſes the Style, which is curved, and 3 Inches long, upon the Top of which is ſituated the Germen, crowned by an acute Stigma. The Germen afterwards turns to a taper Fruit 2 Inches and a Half long, compoſed of 5 Capſules, cloſely twiſted over each other like a Screw; theſe are hairy, and have each one Cell, containing ſeveral Kidney-ſhaped Seeds.

The 2d Sort grows naturally in *Jamaica*, from whence the late Dr. *Houſtoun* ſent me the Seeds. This riſes with a ſhrubby Stalk 9 or 10 Feet high, ſending out many lateral Branches, covered with a ſmooth brown Bark, and garniſhed with Heart-ſhaped Leaves, which end in acute Points, and are ſawed on their Edges, a little woolly on their under Side; the Flowers are produced on the Side of the Branches, on ſhorter Foot Stalks than the former; they are compoſed of 5 Petals, and the Style in the Center, which is ſtrait, upright, and not half ſo long as in the other; the Fruit is thicker, not an Inch long, but twiſted in the ſame Manner.

The 3d Sort riſes with a ſtrong woody Stalk 12 or 14 Feet high, ſending out many ligneous Branches, cloſely covered with hairy Down, and garniſhed with large Heart-ſhaped Leaves, crenated on their Edges, and having large Veins running from the Mid-rib to the Sides; they are of a light yellowiſh green, and a little woolly on their under Side: The Flowers are produced from the Side of the Branches, they are of a yellowiſh white Colour, and larger than thoſe of the other Sorts. The Style is near 4 Inches long, curved like that of the firſt Sort; the Fruit is oval, about one Inch long, very thick at the Bottom, and cloſely covered with hairy Down. This Sort was ſent me by Mr. *Robert Millar*, from *Carthagena*.

Theſe Plants are propagated by Seeds, which muſt be ſown on a hot Bed in the Spring; and when the Plants are come up ſtrong enough to remove, they ſhould be each planted in a ſeparate ſmall Pot, filled with light Earth, and plunged into a moderate hot Bed of Tan, obſerving to ſhade them from the Sun till they have taken new Root; then they ſhould be treated as other tender Plants from hot Countries, raiſing the Glaſſes every Day in Proportion to the Weather, that the Plants may enjoy freſh Air, which will ſtrengthen them, and prevent their drawing up weak. In the Summer the Plants may remain under the Frames, if there is ſufficient Height for them to grow; but in Autumn they muſt be plunged into the Tan Bed in the Stove, where they ſhould always remain, being careful to ſhift them into larger Pots when they require it, and not to give them too much Wet in Winter; but in Summer they ſhould have a large Share of Air in warm Weather, and require to be often refreſhed with Water: The 2d Year from the Seeds theſe Plants have often flowered in the *Chelſea* Garden, and the Seeds have ſome Years ripened there, but the Plants will live ſeveral Years with proper Management.

HELIOCARPOS. *Lin. Gen. Pl.* 533. *Montia. Houſt. Gen.* We have no Title in *Engliſh* for this Plant.

The *Characters* are,

The Flower hath 1 *Petal which is tubulous at the Bottom, and cut into* 5 *Segments which expand. It hath an Empalement of* 1 *Leaf, which is cut into* 5 *Parts ſpreading open. In the Center is ſituated a roundiſh Germen, ſupporting* 2 *erect Styles, crowned by acute Stigmas which ſtand apart; theſe are attended by ſeveral Stamina, of the ſame Length with the Styles, terminated by narrow Twin Summits which are proſtrate. The Germen becomes an oval compreſſed Capſule, about* 3 *Lines long and* 2 *broad, with a tranſverſe Partition dividing it in* 2 *Cells, each containing a ſingle roundiſh Seed ending in a Point; the Borders of the Capſule are ſet with Hairs, reſembling Rays.*

We know but one *Species* of this Plant, *viz.*

HELIOCARPOS. *Hort. Cliff.* 211. *Tab.* 16. This is the *Montia arboreſcens mori folio fructu racemoſo. Houſt. Mſſ.* Tree *Montia*, with a Mulberry Leaf and branching Fruit.

This Plant was diſcovered by the late Dr. *Houſtoun*, growing naturally about *Old La Vera Cruz* in *New Spain*, from whence he ſent the Seeds to *England*, which ſucceeded in the *Chelſea* Garden, where the Plants have produced Flowers, and ripened Seeds ſeveral Years. It riſes with a thick woody Stalk which is ſoft, from 15 to 18 Feet high, ſending out ſeveral lateral Branches toward the Top, garniſhed with Heart-ſhaped Leaves full of Veins, ſawed on their Edges and ending in acute Points; they have Foot Stalks 3 Inches long, which ſtand oblique to the Leaves, and are placed alternate; the Flowers are produced at the End of the Shoots, in branching Cluſters; they are of a yellowiſh green, and are ſucceeded by flat compreſſed Seed Veſſels of an oval Shape, whoſe Borders are cloſely ſet with Threads repreſenting Rays, of a browniſh Colour when ripe; theſe Capſules are divided into 2 Cells by an intermediate Partition, in each of theſe is lodged a ſingle roundiſh Seed ending in a Point.

This Plant is propagated by Seeds, which muſt be ſown on a hot Bed in the Spring; and when the Plants are fit to remove, they ſhould be each planted in a ſeparate ſmall Pot filled with light Kitchen Garden Earth, and plunged into a hot Bed, treating them as other tender Plants, which will not bear the open Air in this Country at any Seaſon of the Year; and while the Plants are young, they require to be plunged in the Tan Bed, but after they have acquired Strength, they will thrive in the dry Stove: In Winter they ſhould have but little Water, and muſt be kept warm; but in Summer they ſhould have Plenty of freſh Air in mild Weather, and muſt be frequently refreſhed with Water. With this Management the Plants will flower the third Year, and produce good Seeds, but may be preſerved ſeveral Years with proper Care.

I have ſowed Seed of this Plant which had been kept 10 Years, and came up as well as if it had been ſaved the former Year; though from the Appearance of the Seed, it ſeems as unlike to grow after the firſt Year as any which I know.

HELIOTROPIUM. *Lin. Gen. Pl.* 164. *Tourn. Inſt. R. H.* 138. *Tab.* 57. Turnſole.

The *Characters* are,

The Empalement of the Flower is of 1 *Leaf, tubulous at Bottom, but cut into* 5 *at the Brim. The Flower hath* 1 *Petal with a Tube the Length of the Empalement, ſpreading flat above, where it is cut into* 5 *Parts, which are alternately larger than the other; the Chaps of the Tube is cloſed, and hath* 5 *prominent Scales, joined in form of a Star. It hath* 5 *ſhort Stamina within the Tube, terminated by ſmall Summits, and* 4 *Germina at the Bottom of the Tube, with* 1 *ſlender Style, the Length of the Stamina, crowned by an indented Stigma. The Germina become ſo many Seeds, ſitting in the Empalement.*

The *Species* are,

1. HELIOTROPIUM *foliis ovatis integerrimis tomentoſis rugoſis, ſpicis conjugatis. Hort. Upſal.* 33. *Heliotrope* with oval, entire, woolly, rough Leaves, and conju-

gated Spikes. *Heliotropium majus Dioſcoridis. C. B. P.* 253. The greater Turnſole of *Dioſcorides.*

2. Heliotropium *foliis cordato-ovatis acutis ſcabriuſculis, ſpicis ſolitariis, fructibus bifidis. Flor. Zey.* 70. *Heliotrope* with Heart-ſhaped oval Leaves pointed and rough, ſingle Spikes of Flowers and bifid Seeds. *Heliotropium Americanum cæruleum, foliis hormini. Acad. Reg. Sc.* Blue *American* Turnſole, with Clary Leaves.

3. Heliotropium *foliis lanceolato-ovatis acuminatis rugoſis, ſpicis ſolitariis gracilioribus alaribus & terminalibus. Heliotrope* with Spear-ſhaped oval Leaves, which end in acute Points and are rough, and ſlender ſingle Spikes of Flowers proceeding from the Sides and Tops of the Stalks. *Heliotropium Americanum cæruleum, foliis hormini anguſtioribus. H. L.* Blue *American* Turnſole, with narrower Clary Leaves.

4. Heliotropium *foliis oblongo-ovatis integerrimis glabris ſubtus incanis, floribus capitatis alaribus, caule arboreſcente. Heliotrope* with oblong, oval, entire, ſmooth Leaves, hoary on their under Side, Flowers growing in Heads from the Wings of the Stalks, and a Tree-like Stalk. *Heliotropium arboreſcens, folio teucrii, flore albo in capitula denſa congeſto. Boerh. Ind.* Tree-like Turnſole, with a Germander Leaf, and white Flowers growing in thick ſhort Heads.

5. Heliotropium *foliis ovatis crenatis oppoſitis, floribus capitatis alaribus dichotomis, caule arboreſcente. Heliotrope* with oval crenated Leaves placed oppoſite, Flowers growing in Heads from the Wings of the Stalks, which diverge, and a Tree-like Stalk. *Heliotropium Canarienſe arboreſcens, folio ſcorodoniæ. Hort. Amſt. Canary* Tree-like Turnſole, with a Wood Sage Leaf.

6. Heliotropium *foliis ovato-lanceolatis, ſpicis plurimis confertis, caule fruticoſo. Heliotrope* with oval Spear-ſhaped Leaves, many Spikes of Flowers growing in Cluſters, and a ſhrubby Stalk.

7. Heliotropium *foliis lanceolato-linearibus glabris aveniis, ſpicis conjugatis. Hort. Cliff.* 45. *Heliotrope* with narrow Spear-ſhaped ſmooth Leaves without Veins, and conjugated Spikes of Flowers. *Heliotropium Curaſſavicum, foliis lini umbilicati. Par. Bat. Prod. Heliotrope* of *Curaſſao*, with a *Venus* Navelwort Leaf.

8. Heliotropium *foliis lieari-lanceolatis obtuſis tomentoſis, floribus alaribus ſeſſilibus, caule arboreo. Heliotrope* with narrow, obtuſe, Spear-ſhaped, woolly Leaves, Flowers ſitting cloſe to the Side of the Branches, and a Tree-like Stalk. *Heliotropium arboreum, maritimum, tomentoſum, gnaphalii Americani foliis. Sloan. Cat.* 93. Tree maritime woolly *Heliotrope*, with a Sea Cudweed Leaf.

9. Heliotropium *foliis lanceolatis ſeſſilibus, ſpicis ſolitariis alaribus & terminalibus, caule fruticoſo. Heliotrope* with Spear-ſhaped Leaves ſitting cloſe to the Branches, ſingle Spikes of Flowers proceeding from the Sides and Tops of the Stalk, which is ſhrubby. *Heliotropium minus lithoſpermi foliis.* Smaller *Heliotrope* with Leaves like Gromwel.

10. Heliotropium *caule procumbente, foliis ovatis tomentoſis integerrimis, ſpicis ſolitariis terminalibus. Heliotrope* with a trailing Stalk, oval, woolly, entire Leaves, and ſingle Spikes of Flowers terminating the Branches. *Heliotropium Americanum ſupinum & tomentoſum, foliis ſubrotundis. Houſt. Mſſ.* Low *American* woolly *Heliotrope*, with roundiſh Leaves.

11. Heliotropium *foliis oblongo-ovatis tomentoſis, ſpicis conjugatis terminalibus, caule fruticoſo. Heliotrope* with oblong, oval, woolly Leaves, and double Spikes of Flowers terminating the Stalk, which is ſhrubby. *Heliotropium Americanum fruteſcens & tomentoſum, foliis oblongis, floribus albis. Houſt. Mſſ.* Shrubby and woolly *American Heliotrope*, with oblong Leaves and white Flowers.

The 1ſt Sort grows naturally in the South of *France*, in *Spain*, *Italy*, and moſt of the warmer Countries in *Europe*. It is an annual Plant, which ſucceeds better from Seeds which ſcatter in the Autumn, or ſown at that Seaſon, than in the Spring; for when they are ſown in the Spring, they ſeldom come up the ſame Year; but if the Plant is once obtained, and the Seeds ſuffered to ſhed, it will maintain itſelf without any Trouble, requiring no other Culture but to keep it clean from Weeds, and thin the Plants where they are too cloſe.

This riſes about 7 or 8 Inches high, dividing into 2 or three Branches, garniſhed with oval rough Leaves, 2 Inches long and 1 broad in the Middle, of a light green, ſtanding on pretty long Foot Stalks alternately; the Flowers are produced at the End of the Branches in double Spikes, joined at the Bottom, about an Inch and a Half long, turning backward like a Scorpion's Tail. The Flowers are white, and appear in *June* and *July*; the Seeds ripen in the Autumn, ſoon after which the Plant decays.

The 2d Sort grows naturally in the *Weſt-Indies*. This is annual, the Stalk riſes a Foot and a Half, or 2 Feet high, branching out toward the Top; the Leaves are rough and hairy, ſtanding on pretty long Foot Stalks; they are 2 Inches and a Half long, and 1 and a Half broad in the Middle, ending in acute Points; the Flowers are produced toward the End of the Branches in ſingle Spikes 6 Inches long, turning backward at the Top like the other Species. The Flowers are blue, and appear in *July* and *Auguſt*, the Seeds ripen in *September* and *October*.

The 3d Sort grows naturally in the *Weſt-Indies*. This is a ſmaller Plant than the former, ſeldom growing above a Foot high; the Leaves are 1 Inch and a Half long, and about half an Inch broad; the Spikes of Flowers are very ſlender, and not more than 2 Inches long; the Flowers are ſmall, and of a light blue Colour. They appear at the ſame Time with the former, and the Seeds ripen in Autumn.

The Seeds of theſe two Sorts muſt be ſown on a hot Bed in the Spring, and when the Plants come up, they muſt be tranſplanted on another hot Bed to bring them forward, treating them as the Balſamine, and other tender annual Plants; and in *June* they may be taken up with Balls of Earth, and planted in the Borders of the Flower Garden, where they will flower and produce ripe Seeds.

The 4th Sort riſes with a ſhrubby Stalk 6 or 7 Feet high, the young Branches are cloſely covered with a white Down; and the Leaves on thoſe are very hoary and entire, but thoſe on the older Branches are greener, and ſome of them are notched on their Edges; at each

Joint of the Stalks, come out two Branches oppoſite, garniſhed with ſmall hoary Leaves placed oppoſite: Theſe when bruiſed, emit a ſtrong Odour, which to ſome Perſons is very diſagreeable, but others are pleaſed with it. Theſe Plants rarely flower in *England*, for in near 40 Years which I have cultivated them, I have but once ſeen them in flower. The Flowers are white, collected in roundiſh Heads, which turn backward, and ſit cloſe to the Branches; the Leaves continue all the Year, for which the Plants are preſerved in Green-houſes, to add to the Variety in Winter.

The 5th Sort grows naturally in the *Canary Iſlands*. This riſes with a woody Stalk 3 or 4 Feet high, dividing into many Branches, garniſhed with oval Leaves notched on their Edges, growing oppoſite on long Foot Stalks; they are hairy, and of an Aſh Colour on their under Side; the Flowers are produced from the Side of the Branches on pretty long Foot Stalks, each ſuſtaining 4 ſhort roundiſh Spikes or Heads, which divide by Pairs, and ſpread from each other. The Flowers are white, and appear in *June* and *July*, but are not ſucceeded by Seeds in *England*. The Leaves of this Plant, when bruiſed, emit an agreeable Odour, for which it is by ſome Perſons much eſteemed; the Gardeners have given it the Title of Madam *Maintenon*, but for what Reaſon I know not.

The 2 laſt Sorts are too tender to live through the Winrer in the open Air in this Country, ſo muſt be kept in a Green-houſe during that Seaſon, but they only require to be ſcreened from Froſt, ſo may be placed with Myrtles, and the other hardy Green houſe Plants, where they may have a large Share of Air in mild Weather, and be treated the ſame Way; they are eaſily propagated by Cuttings during any of the Summer Months, which, if planted in a ſhady Border, and duly ſupplied with Water, will take Root in 5 or 6 Weeks, then they may be potted, and placed in a ſhady Situation till they have taken new Root, after which they may be treated as the old Plants.

The 6th Sort grows naturally in *Peru*, from whence the Seeds were ſent by the younger *Juſſieu*, to the Royal Garden at *Paris*, where the Plants produced Flowers and Seeds; and from the curious Garden of Duke *D'Ayen*, at *St. Germains*, I was ſupplied with ſome of the Seeds, which have ſucceeded in the *Chelſea* Garden, where the Plants have flowered and perfected their Seeds for ſome Years.

This riſes with a ſhrubby Stalk, 4 or 5 Feet high, dividing into many ſmall Branches, garniſhed with oval Spear-ſhaped rough Leaves, ſet on without Order, they are 3 Inches long, and 1 Inch and a half broad in the Middle, ſtanding on ſhort Foot Stalks, they are hairy, and greatly veined on their under Side, which is of an Aſh Colour. The Flowers are produced at the End of the Branches in ſhort reflexed Spikes, growing in Cluſters. The Foot Stalks divide into 2 or 3, and theſe divide again into leſs, each ſuſtaining a Spike of bluiſh Flowers, which have a ſtrong ſweet Odour. The Plants continue in flower great Part of the Year, and thoſe Flowers which come out in Summer, are ſucceeded by ripe Seeds in Autumn.

It may be propagated either by Seeds or Cuttings. The Seeds ſhould be ſown on a moderate hot Bed in the Spring, and when the Plants are fit to remove, they ſhould be tranſplanted into ſmall Pots filled with light Earth, and plunged into a hot Bed, where they ſhould be ſhaded till they have taken new Root, then they ſhould be inured to the open Air by Degrees, into which they ſhould be removed in Summer, placing them in a ſheltered Situation, and in Autumn they muſt be houſed with other exotick Plants in a good Green-houſe, where they will flower great Part of Winter, ſo will make a good Appearance among the Orange Trees, and other Green-houſe Plants, with whoſe Culture this Plant will thrive. If the Cuttings of this Plant are put into Pots filled with light Earth, during any of the Summer Months, and plunged into a moderate hot Bed, they will take Root very freely, but theſe do not make ſo good Plants as thoſe raiſed from Seeds.

The 7th Sort grows naturally on the Sea Shore in the *Weſt Indies*; this is an annual Plant, whoſe Branches trail on the Ground, and grow a Foot long, they are garniſhed with narrow grayiſh Leaves, which are ſmooth. The Flowers are produced in double Spikes from the Side of their Branches, they are white and ſmall, ſo make no great Appearance. It is propagated by Seeds, and requires the ſame Treatment as the ſecond and third Sorts.

The 8th Sort riſes with an upright woody Stalk, 6 or 7 Feet high, with a hoary Bark, full of Marks where the Leaves have grown; the upper Part of the Stalk divides into 2 or 3 ſtrong woody Branches, which grow erect, and are very cloſely garniſhed with long, narrow, woolly Leaves, which ſtand on every Side the Branches without Order. The Flowers come out from the Side of the Stalks, to which they ſit cloſe, they are ſhort and reflexed, like thoſe of the other Species. The Flowers are purple, ſitting in very woolly Empalements, which are divided into 5 Parts, which ſpread open; the whole Plant is very white and woolly, like the Sea Cudweed, ſo makes an odd Appearance when intermixed with other exotick Plants; this is propagated by Seeds, which muſt be procured from the Places where it naturally grows, for it never produces any in *Europe*; theſe Seeds ſhould be ſown in a Tub of Earth in the Country, for when the dried Seeds come over they ſeldom grow, and if they do, it is not before the Second Year; and from ſeveral Parcels of the Seeds which I have received from the *Weſt Indies*, I have not raiſed more than 2 Plants, and theſe came up from Seeds which had been ſown more than a Year, ſo that if the Seeds are ſown as ſoon as they are ripe in a Tub of Earth, when they arrive in *England*, the Tub ſhould be plunged into a hot Bed of Tanners Bark, which will bring up the Plants, and when theſe are fit to remove, they ſhould be each planted in a ſeparate ſmall Pot filled with Earth, compoſed of Sand and light undunged Earth with a little Lime Rubbiſh well mixed together, then plunged into a hot Bed of Tanners Bark, and ſhaded until they have taken new Root, after which they muſt be treated as other tender exotick Plants, always keeping them in the Tan Bed in the Stove, giving them but little Water, eſpecially during the Winter Seaſon.

The 9th Sort is a Native of the *Weſt Indies*, where it grows plentifully on the Sea Shore; it riſes with an upright ſhrubby Stalk, a Foot and a Half high, garniſhed with ſmall Spear-ſhaped Leaves, ſcarce one Inch long, and one Third of an Inch broad in the Middle, ending in acute Points, ſitting cloſe to the Stalk, they are hoary on their under Side, but ſmooth above. The Flowers are produced in ſingle ſlender Spikes, which come out from the Side, and at the Top of the Stalks, they are but little recurved, eſpecially thoſe on the Side, but thoſe at Top are more bent, they are white, ſo make but little Appearance.

The 10th Sort was ſent me from *Carthagena*, in *New Spain*, where it grows naturally on the ſandy Shores. This is an annual Plant, with trailing Stalks, which grow 6 or 7 Inches long, garniſhed with ſmall oval Leaves, which are woolly and entire. The Flowers are produced at the End of the Branches, in ſingle ſhort Spikes, which are reflexed, they are ſmall and white, ſo make little Appearance.

The 11th Sort was ſent me by the late Dr. *Houſtoun*, from *La Vera Cruz*, where he found it growing in Plenty; this riſes with a ſhrubby Stalk, 3 Feet high, dividing into ſlender Branches, cloſely garniſhed with oblong, oval, woolly Leaves, placed without Order. The Flowers are produced at the End of the Branches in double Spikes, which are ſlender, ſhort, and ſtrait, not recurved as the other Species. The Flowers are ſmall and white, and the Plant is perennial.

Theſe three laſt mentioned are propagated by Seeds, but the Difficulty of getting them freſh from *America*, and the Uncertainty of their growing, unleſs they are ſown Abroad, and brought over in Earth, has rendered them rare in *Europe*, and as they are Plants of little Beauty, ſo few Perſons have taken the Trouble to procure them, beſides, as they require a Stove to preſerve them in this Country, and muſt have a peculiar Soil and Management like the 8th Sort, ſo, unleſs for Variety in Botanick Gardens, they are not worth cultivating here.

HELLEBORINE. *See* Serapias *and* Limadorum.

HELLEBOROIDES HYEMALIS. *See* Helleborus.

HELLEBORO RANUNCULUS. *See* Trollius.

HELLEBORUS. *Lin. Gen. Pl.* 622. *Tourn. Inſt. R. H.* 271. *Tab.* 144. Black Hellebore, or *Chriſtmas* Flower; in *French*, *Ellebore-Noire.*

The *Characters* are,

The Flower hath no Empalement; it hath 5 large roundiſh Petals, which are permanent, and many ſmall Nectaria, placed circularly, each being of one Piece, with a narrow Tube at the Bottom, divided at the Brim into 2 Lips, the under being ſhort and indented; it hath a great Number of Stamina, terminated by compreſſed erect Summits, and ſeveral Germina, which are compreſſed, ſupporting Awl-ſhaped Styles, crowned by thick Stigmas. The Germina turn to compreſſed Capſules, with 2 Keels, the lower being ſhort, and the upper convex, which are filled with round Seeds adhering to the Seam.

The *Species* are,

1. HELLEBORUS *caule multifloro folioſo, foliis pedatis. Lin. Sp. Pl.* 558. Hellebore with many Flowers on a Stalk, which are intermixed with Leaves, and ramoſe Leaves fitting on the Foot Stalk. *Helleborus niger fetidus. C. B. P.* Stinking Black Hellebore, Bears Foot, or Setterwort.

2. HELLEBORUS *caule multifloro folioſo, foliis digitatis. Lin. Sp. Pl.* 558. Hellebore with many Flowers on a Stalk, which are intermixed with Leaves, and fingered Leaves. *Helleborus niger hortenſis, flore viridi. C. B. P.* Green flowered Black Hellebore, or Bears Foot.

3. HELLEBORUS *ſcapo ſub-unifloro ſub-nudo, foliis pedatis. Hort. Upſal.* 157. Hellebore with one Flower on a Stalk, which is naked, and Hand-ſhaped Leaves ſitting on the Foot Stalk. *Helleborus niger, flore albo, etiam interdum valde rubente. J. B.* True Black Hellebore, or *Chriſtmas* Roſe.

4. HELLEBORUS *caule multifloro, foliis ternatis integerrimus*, Hellebore with many Flowers on a Stalk, and Leaves compoſed of three entire Lobes. *Helleborus niger trifoliatus. Hort. Farn.* Trifoliate Black Hellebore.

5. HELLEBORUS *flore folio inſidente. Hort. Cliff.* 227. Hellebore with the Flower ſitting upon the Leaf. This is the *Aconitum hyemale*, or Winter *Aconite.*

6. HELLEBORUS *caule multifloro folioſo, foliis digitatis ſerratis amplioribus.* Hellebore with many Flowers on a Stalk, intermixed with Leaves, and large fingered Leaves, which are ſawed. *Helleborus niger amplioribus foliis. Tourn. Inſt. R. H.* 272. Black Hellebore with larger Leaves.

The 1ſt Sort grows naturally in Woods, in ſeveral Parts of *England*, but particularly in *Suſſex*, where I have ſeen it in great Plenty; this hath a jointed herbaceous Stalk, which riſes near 2 Feet high, dividing into 2 or 3 Heads, garniſhed with Leaves compoſed of 8 or 9 long narrow Lobes, which join at their Baſe; 4 of theſe on each Side are joined together at their Tails, and the Middle one ſtands on the Center of the Foot Stalk; theſe are ſawed on their Edges, and end in acute Points; thoſe on the lower Part of the Stalk are much larger than the upper which are ſmall and narrow. The Flower Stalk ariſes from the Center of the Plant, dividing into many Branches each ſuſtaining ſeveral ſmaller Foot Stalks, with 1 entire Spear-ſhaped Leaf upon each, and 1 large greeniſh Flower at the Top with purpliſh Rims; theſe appear in Winter, and the Seeds ripen in the Spring, which if permitted to ſcatter, the plants will riſe without Care, and may be tranſplanted into Woods, or in Wilderneſs Quarters, where they will grow in great Shade, and make a good Appearance at a Seaſon when there are but few Plants in Beauty.

The 2d Sort grows naturally at *Ditton*, near *Cambridge*, and in the Woods near *Stoken Church*, in *Oxfordſhire.* The Stalks of this Sort grow more upright than thoſe of the firſt, and do not branch ſo much. The Leaves are compoſed of 9 long Lobes, which unite to the Foot Stalk at their Baſe, and are ſharply ſawed on their Edges, they are of a lighter green than thoſe of the firſt Sort. The Flowers are produced at the Top of the Stalk, having 1 or 2 Leaves ſet on the Foot Stalk, they are compoſed of 5 oval green Petals, with a great Number of Stamina ſurrounding the Germen in the Middle; theſe appear the Beginning of *February*, and the Seeds ripen the End of *May*, which if ſown ſoon after they are ripe, the Plants will come up early the following Spring, and, when they have obtained Strength, may be planted in ſhady Places under Trees, where they will thrive and flower very well. The Leaves of this Sort decay in Autumn, and new ones ariſe from the Roots in the Spring, but the firſt Sort is always green.

The 3d Sort is ſuppoſed to be the Hellebore of the Antients; this grows naturally on the *Alps* and *Apennine* Mountains. The Root of this Sort is compoſed of many thick fleſhy Fibres, which ſpread far into the Ground, from which ariſe the Flowers upon naked Foot Stalks, immediately from the Root, each ſupporting one large white Flower, compoſed of 5 roundiſh Petals, with a great Number of Stamina in the Middle. The Leaves of this are compoſed of 7 or 8 thick fleſhy obtuſe Lobes, ſlightly ſawed on their Edges, which unite with the Foot Stalk at their Baſe; this Plant flowers in Winter, from whence the Title of *Chriſtmas* Roſe was applied to it; this is propagated by parting the Roots in Autumn, for the Seeds ſeldom ripen well in *England*; it ſhould have a warmer Situation than either of the former, otherwiſe it will not flower well.

The 4th Sort is like the 2d, but differs from it in having trifoliate Leaves, which are broader; this flowers early in Winter, and the Stalks riſe higher than either of the former Sorts, but is at preſent rare in *England*.

The 5th Sort is the common Winter *Aconite*, ſo well known as to need no Deſcription. It flowers very early in the Spring, which renders it worthy of a Place in all curious Gardens, eſpecially as it requires but little Room; this is propagated by Offſets, which the Roots ſend out in Plenty; theſe Roots may be taken up and tranſplanted, any Time after their Leaves decay, which is generally by the Beginning of *June*, till *October*, when they will begin to put out new Fibres, but as the Roots are ſmall, and nearly the Colour of the Ground, ſo, if Care is not taken to ſearch them, many of the Roots will be left in the Ground; theſe Roots ſhould be planted in ſmall Cluſters, otherwiſe they will not make a good Appearance; for ſingle Flowers ſcattered about the Borders of theſe ſmall Kinds, are ſcarce ſeen at a Diſtance, but when theſe and the Snowdrops are alternately planted in Bunches, they will have a good Effect, as they flower at the ſame Time, and are much of a Size.

The 6th Sort is like the firſt, but the Lobes of the Leaves are broader, and the Stalks grow taller; this grows naturally in *Iſtria* and *Dalmatia*, from whence I received ſome of the Seeds; it has been ſuppoſed to be only a ſeminal Variety of the firſt, and as ſuch I ſowed the Seeds, but the Plants had a very great Difference, and the firſt Winter proving ſevere, they were all deſtroyed, ſo that it is not ſo hardy as our common Sort, and depending on their being ſo, occaſioned the Loſs of the Plants.

HELLEBORUS flore globoſo. *See* Trollius.

HELLEBORUS ALBUS. *See* Veratrum.

HELMET FLOWER, or MONK's HOOD. *See* Aconitum.

HEMEROCALLIS. *Lin. Gen. Pl.* 391. *Lilio-Aſphodelus. Tourn. Inſt R. H.* 344. *Tab.* 179. *Liliaſtrum. Tourn. Inſt. R. H.* 369. *Tab.* 194. Lily Aſphodel, or Day Lily; in *French, Lis de Saint Bruno.*

The *Characters* are,

The Flower has no Empalement; in ſome Species the Flower is of 1 *Petal, cut into* 6 *Parts, in others it hath* 6 *Petals, with a ſhort Tube, ſpreading open at the Top, which is reflexed. There are* 6 *Awl-ſhaped declining Stamina, ſurrounding the Style, terminated by oblong proſtrate Summits. The roundiſh furrowed Germen is ſituated in the Middle, ſupporting a ſlender Style, crowned by an obtuſe* 3 *cornered Stigma. The Germen becomes an oval* 3 *cornered Capſule with* 3 *Lobes, opening with* 2 *Valves, filled with roundiſh Seeds.*

The *Species* are,

1. HEMEROCALLIS *ſcapo ramoſo, corollis monopetalis. Hort. Upſal.* 88. Day Lily with a branching Stalk, and the Flower of 1 Petal. *Lilio-Aſphodelus luteus. Park. Par.* 148. Yellow Aſphodel Lily.

2. HEMEROCALLIS *ſcapo compreſſo corollis monopetalis campanulatis.* Day Lily with a compreſſed Stalk, and a Bell-ſhaped Flower of 1 Petal. *Lilio-Aſphodelus luteus, minor. Tourn. Inſt. R. H.* 344. Smaller yellow Aſphodel Lily.

3. HEMEROCALLIS *ſcapo ramoſo, corollis monopetalis ſtaminibus longioribus.* Day Lily with a branching Stalk, Flowers of 1 Petal and longer Stamina. *Lilio-Aſphodelus phœnicius. Park. Par.* 148. Aſphodel Lily with a reddiſh Flower.

4. HEMEROCALLIS *ſcapo ſimplici, corollis hexapetalis campanulatis. Hort. Cliff.* 128. Day Lily with an unbranched ſingle Stalk, and Bell-ſhaped Flowers with 6 Petals. *Liliaſtrum Alpinum majus. Tourn. Inſt. R. H.* 369. Greater *Alpine* Baſtard Lily, called *Savoy* Spiderwort; and in *French, Lis de Saint Bruno,* i. e. *St. Bruno*'s Lily.

The 1ſt Sort grows naturally in *Hungary, Dalmatia,* and *Iſtria*, but has long been an Inhabitant in the *Engliſh* Gardens; this hath ſtrong fibrous Roots, to which hang Knobs, or Tubers, like thoſe of Aſphodel, from which come out keeled Leaves, a Foot and a Half long, with a rigid Mid-rib in the Middle, the 2 Sides drawing inward, ſo as to form a Sort of Gutter on the upper Side. The Flower Stalks riſe a Foot and a Half high, having 2 or 3 longitudinal Furrows; theſe are naked, and at the Top divide into 3 or 4 ſhort Foot Stalks, each ſuſtaining 1 pretty large yellow Flower ſhaped like a Lily, having but 1 Petal, with a ſhort Tube, ſpreading open at the Brim, where it is divided into 6 Parts; theſe have an agreeable Scent, from whence ſome have given it the Title of yellow Tuberoſe. It flowers in *June*, and the Seeds ripen in *Auguſt*; this Plant is eaſily propagated by Offſets, which the Roots ſend out in Plenty; theſe may be taken off in Autumn, that being the beſt Seaſon for tranſplanting the Roots, and planted in any Situation, for they are extremely hardy, and will require no other Culture but to keep them clean from Weeds, and to allow them Room, that their Roots may ſpread; they may alſo be propagated by Seeds, which, if ſown in Autumn, the Plants will come up the following Spring, and flower in 2 Years; but if the Seeds are not ſown till Spring, the Plants will not come up till the Year after.

The 2d Sort grows naturally in *Siberia*; this hath Roots like thoſe of the former Sort, but ſmaller. The Leaves are not near ſo long, nor more than half the Breadth of the former, and of a dark green Colour: The Flower Stalk riſes a Foot and a Half high, is naked and compreſſed, but has no Furrows; at the Top is produced 2 or 3 yellow Flowers, nearer the Bell-ſhape than thoſe of the other Species, on ſhorter Foot Stalks; theſe flower the Beginning of *June*, and the Seeds ripen early in *Auguſt*. It is propagated by Offſets from the Root, or by Seeds as the former, but the Roots do not increaſe ſo faſt; it ſhould have a moiſt Soil, and a ſhady Situation, where it will thrive much better than in dry Ground.

The 3d Sort is a much larger Plant than either of the former, and the Roots ſpread and increaſe much more, therefore is not proper Furniture for ſmall Gardens; the Roots of this hath very ſtrong fleſhy Fibres, to which hang large oblong Tubers. The Leaves are near 3 Feet long, hollowed like thoſe of the former, turning back toward the Top. The Flower Stalks are as thick as a Man's Finger, and riſe near 4 Feet high, they are naked, without Joints, and branching at the Top, where are ſeveral large Copper-coloured Flowers, ſhaped like thoſe of the red Lily, and as large. The Stamina of this Sort are longer than thoſe of the other, and their Summits are charged with a Copper-coloured Farina, which ſheds on being touched, or if a Perſon ſmells to the Flowers, it will fly off and ſpread over the Face, dying it all over of a Copper Colour. The Flowers never continue longer than one Day, but there is a Succeſſion of Flowers on the ſame Plants for a Fortnight or three Weeks; this Sort flowers about the ſame Time as the former, and the Roots propagate too faſt for thoſe Gardens, where there is but little Room. It will grow on any Soil, or in any Situation; the beſt Time to tranſplant the Roots is in Autumn.

The *Savoy* Spiderwort, or, as the *French* call it, St. *Bruno*'s Lily, is a Plant of humbler Growth than either of the former; there are two Varieties of this, one is titled *Liliaſtrum Alpinum majus*, and the other *Liliaſtrum Alpinum minus* by *Tournefort*; the 1ſt of theſe riſes with a Flower Stalk more than a Foot and a Half high. The Flowers are much larger, and there is a greater Number upon each Stalk, than the ſecond; but as there is no other eſſential Difference between them, I have not put them down as different Species, but the firſt is by much the finer Plant, though not common in *England*, for the 2d Sort is what I have always obſerved in the Gardens here. I received ſome Roots of the 2d Sort from Monſ. *Richard*, Gardener to the King of *France*, which continue their Difference in the ſame Soil and Situation with the 1ſt, which flowers earlier in the Year; the Leaves of this Sort are ſomewhat like thoſe of the Spiderwort, are pretty firm, and grow upright; the Flower Stalks grow about a Foot high, and have ſeveral white Flowers at the Top, ſhaped like thoſe of the Lily, which hang on one Side, and have an agreeable Scent; theſe are but of ſhort Duration, ſeldom continuing in Beauty above 3 or 4 Days, but when the Plants are ſtrong, they will produce 8 or 10 Flowers upon each Stalk, ſo they make a good Appearance while they laſt.

Theſe Sorts are uſually propagated by parting the Roots; Autumn is the beſt Seaſon for this Work, and alſo for tranſplanting the Roots, for when they are removed in the Spring, they ſeldom flower the ſame Year, or, if they do, it is but weakly; theſe Plants ſhould not be tranſplanted oftener than every third Year, when the Roots may be parted to make an Increaſe of the Plants, but they ſhould not be divided too ſmall, for if they are, it will be 2 Years before they flower; theſe Plants delight in a light loamy Soil, and open Expoſure, ſo muſt not be planted under the Drip of Trees; but if they are planted to an Eaſt Aſpect, where they may be protected from the Sun in the Heat of the Day, they will continue in Beauty longer than when they are more expoſed.

HEMIONITIS, Moonfern.

This is a Plant ſeldom propagated in Gardens, therefore I ſhall not trouble the Reader with any Account of it more than this, That whoever hath a mind to cultivate any of the Sorts, muſt procure the Plants from the Countries where they naturally grow; there are two Sorts Natives of the warmer Parts of *Europe*, but in *America* there is a great Number of very different Kinds; theſe muſt be planted in Pots filled with loamy undunged Earth, and ſuch of them as are Natives of hot Countries, muſt be placed in the Stove, the others may be ſheltered under a common Frame in Winter, and during the Summer they muſt be frequently watered, but in Winter they will require but little. In Summer they ſhould alſo have Plenty of free Air admitted to them; with this Management the Plants will thrive.

HEPATICA. *Boerh. Ind. Plant. Ranunculus. Tourn. Inſt. R. H.* 286. *Anemone. Lin. Gen. Pl.* 614. Hepatica, or Noble Liverwort.

The *Characters* are,

The Flower hath a 3 leaved Empalement. It hath 6 Petals, which are oval, and expand to the Bottom, with a great Number of ſlender Stamina, ſhorter than the Petals, terminated by obtuſe Summits, and ſeveral Germina collected into a Head, ſupporting acuminated Styles, crowned by obtuſe Stigmas. The Germina turn to acuminated Seeds ſitting round the Styles.

The *Varieties* of this Plant are,

1. HEPATICA *trifolia, cœruleo flore. Cluſ.* The ſingle blue Hepatica, or Noble Liverwort.

2. HEPATICA *trifolia, flore cæruleo pleno. Cluſ.* The double blue Hepatica, or Noble Liverwort.

3. HEPATICA *trifolia, flore albo ſimplici. Boerh. Ind.* The ſingle white Hepatica, or Noble Liverwort.

4. HEPATICA *trifolia, rubro flore. Cluſ.* Single red Hepatica, or Noble Liverwort.

5. HEPATICA *trifolia, flore rubro pleno. Boerh. Ind.* Double red, or Peach-coloured Hepatica.

Theſe Plants are ſome of the greateſt Beauties of the Spring; their Flowers are produced in *February* and *March* in great Plenty, before the green Leaves appear, and make a very beautiful Figure in the Borders of the Pleaſure Garden, eſpecially the double Sorts, which commonly continue a Fortnight longer in flower than the ſingle Kinds, and the Flowers are much fairer. I have ſeen the double white Kind often mentioned in Books, but could never ſee it growing, though I do not know but ſuch a Flower might be obtained from Seeds of the ſingle white, or blue Kinds. I have ſometimes known the double blue Sort produce ſome Flowers in Autumn, which were inclining to white, and thereby ſome People have been deceived, who have procured the Roots at that Seaſon, and planted them in their Gardens, but the Spring following their Flowers were blue, as before; and this is what frequently happens when the Autumn is ſo mild as to cauſe them to flower; but whether the double white Sort, mentioned in the Books, was only this accidental Alteration in the Colour of the Flower, I cannot ſay, though it ſeems very probable it was, ſince I never could hear of any Perſon who ever ſaw the double white Sort flower in the Spring.

The ſingle Sorts produce Seeds every Year, whereby they are eaſily propagated, and alſo new Flowers may be that Way obtained. The beſt Seaſon for ſowing the Seeds is in the Beginning of *Auguſt*, either in Pots or Boxes of light Earth, which ſhould be placed ſo as to have only the Morning Sun until *October*, when they ſhould be removed into the full Sun, to remain during the Winter Seaſon; but in *March*, when the young Plants will begin to appear, they muſt be removed again to a ſhady Situation, and in dry Weather ſhould be frequently watered, and about the Beginning of *Auguſt* they will be fit to be tranſplanted; at which Time you ſhould prepare a Border, facing the Eaſt, of good freſh loamy Earth, into which you ſhould remove the Plants, placing them at about 6 Inches Diſtance each Way, cloſing the Earth pretty faſt to their Roots, to prevent the Worms from drawing them out of the Ground, which they are very apt to do at that Seaſon, and, in the Spring following, they will begin to ſhew their Flowers, but it will be 3 Years before they flower ſtrong, and till then you cannot judge of their Goodneſs, when, if you find any double Flowers, or any of a different Colour from the common Sorts, they ſhould be taken up, and tranſplanted into the Borders of the Flower Garden, where they ſhould continue at leaſt 2 Years before they are taken up, or parted, for it is remarkable in this Plant, that where they are often removed and parted, they are very ſubject to die, whereas, when they are permitted to remain undiſturbed for many Years, they will thrive exceedingly, and become very large Roots.

The double Flowers, which never produce Seeds, are propagated by parting their Roots, which ſhould be done in *March*, at the Time when they are in flower; but you ſhould be careful not to ſeparate them into very ſmall Heads, nor ſhould they be parted oftener than every 3d or 4th Year, if you intend to have them thrive, for the Reaſon before given. They delight in a ſtrong loamy Soil, and in an Eaſtern Poſition, where they may have only the Morning Sun, though they will grow in almoſt any Aſpect, and are never injured by Cold.

HEPATORIUM. *See* Eupatorium.

HEPTAPHYLLUM. *See* Potentilla.

HERACLEUM. *See* Sphondylium *and* Panax.

HERBA GERARDI. *See* Angelica ſylveſtris minor.

HERBA PARIS. *See* Paris.

HERBIFEROUS ſignifies bearing or bringing forth Herbs.

HERBIVOROUS, *i. e.* devouring or feeding on Herbs or Graſs.

HERBOSE, graſſy, or full of Graſs or Herbs.

HERBULENT, graſſy, full of Graſs or Herbs.

HERMANNIA. *Tourn. Inſt. R. H.* 656. *Tab.* 432. *Lin. Gen. Pl.* 742.

The *Characters* are,

The Flower hath a Pitcher-ſhaped permanent Empalement divided into 5 Parts at the Brim. It hath 5 Petals, which are narrow at their Baſe, and twiſt againſt the Sun within the tubulous Empalement, but ſpread open above, where they are broad and obtuſe. It hath 5 broad Stamina, joined in one Body, terminated by pointed Summits, which are joined. In the Center is ſituated a roundiſh 5 cornered Germen, ſupporting an Awl-ſhaped Style, longer than the Stamina, crowned by a ſingle Stigma. The Germen becomes a 5 cornered roundiſh Capſule with 5 Cells opening at the Top, incloſing many Seeds.

The *Species* are,

1. HERMANNIA *foliis cuneiformibus plicatis, crenato-emarginatis. Hort. Cliff.* 342. *Hermannia* with Wedge-ſhaped folded Leaves, crenated and indented. *Hermannia fruteſcens, folio oblongo ſerrato latiori. Boerh. Ind.* Shrubby *Hermannia* with a broader oblong ſerrated Leaf.

2. HERMANNIA *foliis obovatis acutè inciſis, pedunculis bifloris. Prod. Leyd.* 347. *Hermannia* with oval Leaves acutely cut, and Foot Stalks having 2 Flowers. *Hermannia fruteſcens folio groſſulariæ parvo hirſuto. Boerh. Ind.* Shrubby *Hermannia* with a ſmall hairy Gooſeberry Leaf.

3. HERMANNIA *foliis obovatis plicatis crenatis tomentoſis. Hort. Cliff.* 343. *Hermannia* with oval folded woolly Leaves, crenated. *Hermannia fruteſcens, folio ibiſci hirſuto molli, caule piloſo. Boerh. Ind.* Shrubby *Hermannia* with a ſoft hairy Marſhmallow Leaf, and a woolly Stalk.

4. HERMANNIA *foliis lanceolatis obtuſis ſerratis. Hort. Cliff.* 342. *Hermannia* with obtuſe Spear-ſhaped Leaves, ſawed. *Hermannia fruteſcens, folio oblongo ſerrato. Tourn.* Shrubby *Hermannia* with an oblong ſerrated Leaf.

5. HERMANNIA *foliis oblongo-ovatis crenatis tomentoſis flore mutabili. Hermannia* with oblong, oval, crenated woolly Leaves, and a changeable Flower. *Hermannia fruteſcens, folio oblongo molli cordato hirſuto. Boerh. Ind.* Shrubby *Hermannia* with a ſoft, oblong, hairy, Heart-ſhaped Leaf.

6. HERMANNIA *foliis pinnatifidis linearibus. Hort. Cliff.* 342. *Hermannia* with narrow Leaves ending in many Points. *Hermannia fruteſcens, folio multifido tenui, caule rubro. Boerh. Ind. alt.* Shrubby *Hermannia* with a narrow multifid Leaf, and a red Stalk.

7. HERMANNIA *foliis lanceolatis obtuſis integerrimis. Hort. Cliff.* 342. *Hermannia* with obtuſe Spear-ſhaped Leaves, which are entire. *Hermannia fruteſcens, folio lavendulæ latiori & obtuſo, flore parvo aureo. Boerh. Ind. alt.* Shrubby *Hermannia* with a broad blunt Lavender Leaf, and a ſmall golden Flower.

8. HERMANNIA *foliis cordatis nervoſis hirſutis, pedunculis bifloris. Hermannia* with Heart-ſhaped, nervous, hairy Leaves, and two Flowers on each Foot Stalk.

9. HERMANNIA *foliis ſimplicibus ternatiſque hirſutis ſeſſilibus. Hermannia* with ſingle and trifoliate Leaves, which are hairy, and ſit cloſe to the Stalk.

The 1ſt Sort riſes with a ſhrubby Stalk, 3 or 4 Feet high, dividing into many irregular Branches, covered with a brown Bark, and garniſhed with Wedge-ſhaped Leaves, narrow at their Baſe, but broad and round at the Top, they are about an Inch long, and three Quarters broad at the Point, where they are indented and crenated. The Flowers are produced in ſhort Spikes on the upper Part of the Branches, they are of a deep yellow Colour, but ſmall; theſe appear in *April* and *May*, but are rarely ſucceeded by Seeds in *England*.

The 2d Sort is a Shrub about the ſame Height with the firſt, but ſends out a great Number of Branches, which ſpread wide on every Side, garniſhed with ſmaller Leaves than thoſe of the former, which are rough, and ſit cloſe to the Branches. The Flowers are produced in ſhort cloſe Spikes at the End of every Shoot, ſo that the whole Shrub ſeems covered with Flowers, they are of a bright yellow, and appear toward the End of *April*, but are not ſucceeded by Seeds in *England*.

The 3d Sort is a Plant of humbler Growth than the former, ſeldom riſing more than 2 Feet and a Half high; the Stem is not ſo woody, and the Branches are ſoft and ſlender; they are garniſhed with oval woolly Leaves plaited, and crenated on the Edges; the Flowers are produced in looſe Panicles at the End of the Branches; they are larger than thoſe of the other Species, and have very hairy Empalements. This Sort flowers in *June* and *July*, and frequently puts out more in the Autumn.

The 4th Sort has been longer in the *European* Gardens, than either of the other. This riſes with a ſhrubby upright Stalk, 7 or 8 Feet high, ſending out many ligneous Branches from the Side, which alſo grow more erect than any of the other; theſe are cloathed with obtuſe Spear-ſhaped Leaves, about an Inch and a Half long, and half an Inch broad, ſawed on the Edges toward the End: The Flowers come out in ſmall Bunches from the Side of the Stalk; they are of a pale Straw Colour, and appear in *May* and *June*; theſe are frequently ſucceeded by Seeds, which ripen the latter Part of *Auguſt*.

The 5th Sort ſeldom riſes more than 2 Feet high, with a ſoft ligneous Stalk, ſending out ſlender irregular Branches, garniſhed with oblong, oval, woolly Leaves, ſtanding on pretty long Foot Stalks; the Flowers are produced in looſe Spikes at the End of the Branches; theſe are at their firſt Appearance of a Gold Colour, but after they have been ſome Days open, they change to yellow. This flowers in *June* and *July*.

The 6th Sort riſes with a ſhrubby Stalk near 3 Feet high, ſending out many ſlender Branches, covered with a reddiſh Bark, and garniſhed with narrow Wing-pointed Leaves; the Flowers come out from the Side of the Branches in ſmall Cluſters, they are ſmall, and of a deep yellow Colour. This flowers in *June* and *July*.

The 7th Sort hath ſhrubby branching Stalks, which are very buſhy, but ſeldom riſe more than a Foot and a Half high; the Branches are very ſlender, and are garniſhed with hairy pale green Leaves of different Sizes; ſome of them are near 2 Inches long, and 1 broad at their Ends, but their common Size is ſeldom more than 1 Inch long, and half an Inch broad at their Points; they are entire, and ſit pretty cloſe to the Branches; the Flowers come out from the Side of the Stalk ſingly, they are ſmall, and of a deep yellow Colour. This Sort flowers moſt Part of Summer.

The 8th Sort I raiſed from Seeds, which I received from the *Cape of Good Hope*. This hath a ſhrubby, hairy, branching Stalk, about 2 Feet high, garniſhed with Heart-ſhaped hairy Leaves, ſtanding on pretty long Foot Stalks; the Flowers are produced in looſe Panicles at the End of the Branches, each Foot Stalk ſuſtaining 2 large Gold-coloured Flowers, with large hairy Empalements. This Sort flowers moſt Part of Summer.

The 9th Sort I raiſed from Seeds, which came from the *Cape of Good Hope*. This riſes with a ſhrubby hairy Stalk about 2 Feet high, ſending out many Side Branches which grow more erect than thoſe of the former, garniſhed with oblong, veined, hairy Leaves, which are ſometimes ſingle, and at other Times come out by Threes, the middle one being the largeſt; the Flowers are produced toward the End of the Branches, are large, and of a deep yellow Colour, with large ſwollen hairy Empalements. This Sort continues flowering moſt Part of Summer.

All the Species of this Genus yet known, are Natives of the Country about the *Cape of Good Hope*, from whence moſt of them were brought to the Gardens in *Holland*, where they have been propagated and ſpread through moſt Parts of *Europe*.

Theſe Plants are all propagated by planting Cuttings of them during any of the Summer Months, in a Bed of freſh Earth, obſerving to water and ſhade them until they are well rooted, which will be in about 6 Weeks after planting; then you ſhould take them up, preſerving a Ball of Earth to their Roots, and plant them into Pots filled with light freſh Earth, placing them in a ſhady Situation until they have taken freſh Root; after which they may be expoſed to the open Air, with Myrtles, Geraniums, &c. until the Middle or latter End of *October*, when they muſt be removed into the Green-houſe, obſerving to place them in the cooleſt Part of the Houſe, and where they may have as much free Air as poſſible; for if they are too much drawn in the Houſe, they will appear very faint and ſickly, and ſeldom produce many Flowers; whereas, when they are only preſerved from the Froſt, and have a great Share of free Air, they will appear ſtrong and healthy, and produce large Quantities of Flowers in *April* and *May*, during which Seaſon they make a very handſome Appearance in the Green-houſe: They muſt alſo be frequently watered, new potted at leaſt twice every Year, *i. e.* in *May* and *September*; otherwiſe their Roots will be ſo matted, as to prevent their Growth.

Theſe Plants rarely produce good Seeds with us, except the 4th Sort, which ripens its Seeds every Year in *England*; which I ſuppoſe may be accounted for, by their having been long propagated from Cuttings; for thoſe Plants which I have raiſed from Seeds, have been fruitful 2 or 3 Years, but I have always found thoſe Plants which have been propagated by Cuttings taken from theſe, have ſoon become barren; the ſame Thing I have obſerved in many other Plants, therefore thoſe who are deſirous to continue their Plants fruitful, ſhould conſtantly raiſe them from Seeds. Theſe, as alſo thoſe which are obtained from Abroad, muſt be ſown on a moderate hot Bed; and when the Plants come up, they muſt be tranſplanted into ſmall Pots, and plunged into another very moderate hot Bed, in order to promote their Rooting; after which they muſt be hardened by Degrees, to endure the open Air in Summer, and may then be treated as the old Plants.

HERMODACTYLUS, the Hermodactyl, commonly called Snakes-head Iris.

The *Characters* are,

It hath a Lily-ſhaped Flower, conſiſting of 1 *Leaf, and ſhaped exactly like an Iris, but has a tuberous Root, divided into* 2 *or* 3 *Dugs, like oblong Bulbs.*

We have but one *Species* of this Plant, *viz.*

Hermodactylus *folio quadrangulo. C. B. P.* Snakeshead Iris, *vulgò.* This is alſo called, *Iris tuberoſa Belgarum, i. e.* Tuberous Iris of the *Dutch.*

This Plant is eaſily propagated by its Tubers, which ſhould be taken off ſoon after the green Leaves decay, which is the proper Seaſon for tranſplanting the Roots; but they ſhould not be kept long out of the Ground, leſt they ſhrink, which will cauſe them to rot when they are planted. They ſhould have a loamy Soil, not too ſtrong, and muſt be planted to an Eaſt Aſpect, where they will flower very well. Theſe Roots ſhould not be removed oftener than once in three Years, if you deſign to increaſe them; but then they ſhould be planted at a farther Diſtance from each other, than if they were to remain but one Year; and the Beds ſhould be kept clear from Weeds, and at *Michaelmas* there ſhould be ſome fine Earth laid over the Beds, which will greatly ſtrengthen their Roots. The Diſtance which theſe Plants ſhould be allowed is 6 Inches ſquare, and they ſhould be placed 4 Inches deep in the Ground. Theſe produce their Flowers in *May*, and their Seeds are ripe in *Auguſt*; but as they multiply pretty faſt by their Roots, few People are at the Trouble of raiſing them from Seeds; but thoſe who have an Inclination ſo to do, muſt treat them in the Manner directed for the bulbous Iriſes.

The Roots of this Plant are very apt to run deep into the Ground, and then they ſeldom produce Flowers; and many Times they ſhoot ſo deep as to be loſt, eſpecially where the Soil is very light; therefore to prevent this, it will be proper to lay a Thickneſs of Rubbiſh under the Border where theſe are planted, to hinder them from getting down. This ſhould always be practiſed in light Ground, but in ſtrong Land there will be no Occaſion to make Uſe of this Precaution, becauſe they do not ſhoot downward ſo freely in that.

This Plant has by ſome Botanick Writers been ſuppoſed the true Hermodactyl; but what has been long uſed in *Enrope* for that, is the Root of a Colchicum.

HERNANDIA. *Plum. Nov. Gen.* 8. *Tab.* 40. *Lin. Gen. Pl.* 931. Jack-in-a-Box, *vulgò.*

The *Characters* are,

It hath male and female Flowers on the ſame Plant; the male Flowers have a partial Involucrum, compoſed of 4 oval ſmall Leaves, which incloſe 3 Flowers; each of theſe has a proper Bell-ſhaped Empalement of 1 Leaf; the Petal is Funnel-ſhaped, cut into 6 Parts at the Brim; it hath 3 ſhort Stamina inſerted in the Empalement, terminated by erect Summits. The female Flowers are ſhaped like the male, but want Stamina; they have a roundiſh Germen, ſupporting 3 ſlender Styles, crowned by acute Stigmas. The Empalement afterward becomes a large, ſwollen, oblong Fruit, perforated at each End, incloſing one hard globular Nut.

There is but one *Species* of this Genus, *viz.*

Hernandia. *Hort. Cliff.* 485. *Tab.* 13. This is the *Hernandia amplo hederæ folio umbilicato. Plum. Hernandia* with a large umbilicated Ivy Leaf, commonly called in the *Weſt-Indies*, Jack-in-a-Box.

This Plant is very common in *Jamaica, Barbadoes, St. Chriſtophers*, and many other Places in the *Weſt-Indies*, where it is known by the Name of Jack-in-a-Box. The Fruit of this Plant when ripe, is perforated, and the Nut in the Inſide becomes hard; ſo that when the Wind blows through the Fruit, it makes a whiſtling Noiſe, which may be heard at a Diſtance; from whence, I ſuppoſe, the Inhabitants gave this Name to the Plant. It grows in the Gullies, where there are Rills of Water.

In *Europe* this Plant is preſerved in curious Gardens, with other tender exotick Plants. It is propagated by ſowing the Seeds on a hot Bed in the Spring, and when the Plants have riſen 2 Inches high, they ſhould be tranſplanted each into a ſeparate Pot, filled with freſh rich Earth, and plunged into the hot Bed again, obſerving to water and ſhade them until they have taken Root; after which Time they muſt have Air admitted to them (by raiſing the Glaſſes) in Proportion to the Warmth of the Air, or the Heat of the Bed in which they are placed; and they muſt be frequently watered, otherwiſe they will not thrive. As the Plants advance, they ſhould be removed into larger Pots, which ſhould be filled with rich Earth; but in doing this, you ſhould be very careful not to break the Roots, as alſo to preſerve a good Ball of Earth to them; they muſt alſo be frequently watered, and if their Leaves ſhould hang after being removed, the Plants muſt be ſcreened from the Sun until they have taken new Root. The beſt Time to ſhift theſe Plants is in *July*, that they may be well rooted before the Cold approaches, and the Plants muſt be conſtantly kept in the Bark Stove: In Winter they ſhould have a moderate Share of Heat, and in the Summer they muſt have Plenty of Air in hot Weather. With this Management, the Plants will grow to the Height of 16 Feet or more, and the Leaves being very large, will make a beautiful Appearance in the Stove. It hath not as yet flowered in *England*, though we may expect ſome of the large Plants to flower in a ſhort Time.

HERNIARIA. *Tourn. Inſt. R. H.* 507. *Tab.* 288. *Lin. Gen. Pl.* 272. Rupturewort.

The *Characters* are,

The Flower hath no Petals, but a coloured Empalement of 1 Leaf, cut into 5 Parts which ſpread open. It hath 5 ſmall Awl-ſhaped Stamina, ſituated in the Diviſions of the Empalement, terminated by ſingle Summits, and 5 others which are barren, placed alternately between them. In the Center is an oval Germen with 2 Stigmas, which have acute Points; the Germen turns to a ſmall Capſule incloſed in the Empalement, having one oval pointed Seed.

The *Species* are,

1. Herniaria *glabra. J. B.* 3. 378. Smooth Rupturewort.
2. Herniaria *hirſuta. J. B.* 3. 379. Rough or hairy Rupturewort.
3. Herniaria *alſines folio. Tourn. Inſt.* 507. Rupturewort with a Chickweed Leaf.
4. Herniaria *fruticoſa, viticulis lignoſis. C. B. P.* 382. Shrubby Rupturewort, with woody Branches.
5. Herniaria *foliis ovatis lucidis, caule ſuffruticoſo.* Rupturewort with oval ſhining Leaves, and an under Shrub Stalk. *Herniaria lucida aquatica. Sloan. Cat. Jam.* 50. Shining Rupturewort.

The 2 firſt Sorts grow naturally in *England*, but not very common; they are low trailing Plants, their Branches lying on the Ground, and extend 7 or 8 Inches each Way; they have Leaves like the ſmaller Chickweed, the firſt is ſmooth, and thoſe of the ſecond are hairy the Flowers come out in Cluſters from the Side of the Stalks at the Joints, they are ſmall and of a yellowiſh green, ſo make no Appearance.

The 4th Sort hath ſhrubby Stalks which trail on the Ground, garniſhed with ſmall hairy Leaves like the ſecond Sort, the Flowers are alſo very like that.

The 3d Sort is an annual Plant, which grows naturally in *France* and *Italy*. This doth not ſpread ſo much as either of the other Sorts, but the Flowers and Leaves are ſomewhat like the firſt, but larger.

The 5th Sort grows naturally in *Jamaica*, from whence the Seeds were ſent me by the late Dr. *Houſtoun*. This hath a ſhrubby trailing Stalk, dividing into many Branches, garniſhed with ſmall ſhining Leaves; the Flowers come out from the Side of the Stalks, and are like thoſe of the firſt Species. This Plant is tender, ſo muſt be raiſed in a hot Bed, and always kept warm, otherwiſe it will not thrive in this Country.

Theſe Plants are ſeldom cultivated but in Botanick Gardens, for Variety. The 3 firſt are, for the moſt Part, annual Plants, ſeldom continuing longer than one Year; and muſt be permitted to ſhed their Seeds, whereby they are better preſerved than if ſown with Art. The 4th Sort is an abiding Plant, which may be propagated by Cuttings; but as they are Plants of no Beauty, they are rarely preſerved in Gardens.

The 1ſt Sort is what ſhould be uſed in the Shops, but is rarely ſeen in *London*, the Herb Women commonly bringing the Parſley Breakſtone to the Markets, inſtead of this Plant.

HESPERIS. *Tourn. Inſt. R. H.* 222. *Tab.* 108. *Lin. Gen. Pl.* 731. Dame's Violet, Rocket, or Queen's Gilliflower; in *French*, *Juliane*, or *Julienne*.

The *Characters* are,

The Flower is compoſed of 4 oblong Petals in Form of a Croſs, whoſe Baſe or Tails are narrow, and ſituated in a 4 leaved Empalement, which falls away. It hath 6 Awl-ſhaped Stamina as long as the Tube of the Flower, 2 much ſhorter than the other, terminated by narrow erect Summits, reflexed at their Points. It hath a Honey Gland ſituated between the 2 ſhort Stamina, and a 4 cornered Germen the Length of the Stamina, but no Style; the oblong erect Stigma ſitting on the Germen, the Stigma is divided into 2 Parts, which join at their Points. The Germen becomes a plain long compreſſed Pod with 2 Cells, divided by an intermediate Partition, incloſing many oval compreſſed Seeds.

The *Species* are,

1. HESPERIS *caule ſimplici erecto, foliis lanceolatis denticulatis, petalis emarginatis.* Dame's Violet with a ſingle erect Stalk, Spear-ſhaped indented Leaves, and the Petals of the Flower indented at the Top. *Heſperis hortenſis, flore purpureo. C. B. P.* 202. Garden Rocket with a purple Flower.

2. HESPERIS *caule ſimplici erecto, foliis ovato-lanceolatis integerrimis, petalis integris.* Dame's Violet with a ſingle upright Stalk, oval Spear-ſhaped entire Leaves, and the Petals of the Flower entire. *Heſperis hortenſis flore candido. C. B. P.* 202. Garden Rocket with a white Flower.

3. HESPERIS *caule ſimplici erecto, foliis lanceolatis acutis ſerratis, petalis mucrone emarginatis.* Dame's Violet with a ſingle upright Stalk, Spear-ſhaped, acute, ſawed Leaves, and the Tips of the Petals indented. *Heſperis ſylveſtris inodora. C. B. P.* 202. Unſavoury wild Rocket.

4. HESPERIS *caule hiſpido ramoſo patente. Hort. Upſal.* 187. Dame's Violet, with a prickly, branching, ſpreading Stalk. *Heſperis montana, pallida, odoratiſſima. C. B. P.* 202. Sweeteſt pale Mountain Rocket.

5. HESPERIS *caule erecto, ramoſo, hirſuto, foliis oblongo-cordatis, acutis ſeſſilibus denticulatis, petalis integris.* Dame's Violet, with a hairy, erect, branching Stalk, oblong, Heart-ſhaped, pointed, indented Leaves, ſitting cloſe to the Stalk, and the Petals of the Flower entire.

6. HESPERIS *caule ramoſiſſimo diffuſo, foliis lineari-lanciolatis dentatis, ſiliquis apice truncatis* Dame's Violet with a very branching diffuſed Stalk, narrow Spear-ſhaped indented Leaves, and the Points of the Pods ſhaped like a Truncheon. *Heſperis exigua lutea, folio dentato anguſto. Boerh. Ind.* 146. Rocket with a very ſmall yellow Flower, and a narrow indented Leaf.

7. HESPERIS *foliis dentato-pinnatifidis, caule lævi. Lin. Sp. Plant.* 664. Dame's Violet, with Wing-pointed indented Leaves, and a ſmooth Stalk. *Heſperis flore albo minimo, ſiliquâ longâ, folio profundè dentato. Boerh. Ind. alt.* 2. 20. Rocket with a ſmall white Flower, a long Pod, and Leaves deeply indented.

8. HESPERIS *caule ramoſiſſimo diffuſo, foliis lanceolatis ſerratis ſcabris, ſiliquis ſeſſilibus. Lin. Sp. Pl.* 663. Dame's Violet with very branching diffuſed Stalks, Spear-ſhaped, rough, ſawed Leaves, and Pods ſitting cloſe to the Stalks. *Heſperis Africana, hieracii folio hirſuto, flore minimo purpuraſcente. Niſſol. Act. African* Rocket with a hairy Hawkweed Leaf, and a very little purpliſh Flower.

9. HESPERIS *caule erecto ramoſo, foliis cordatis amplexicaulibus ſerratis villoſis. Lin. Sp. Pl.* 664. Dame's Violet with an erect branching Stalk, and hairy, ſawed, Heart-ſhaped Leaves embracing the Stalk. *Turritis annua verna, purpuraſcente flore. Tourn. Inſt.* 224. Annual vernal Tower Muſtard, with a purpliſh Flower.

10. HESPERIS *caule ramoſo diffuſo, ſiliquis teretibus. Hort. Upſal.* Dame's Violet with a diffuſed branching Stalk, and taper Pods. *Leucoium minus, lavendulæ folio, obſoletè flore anguſtifolium. Bocc. Muſ.* 2. 148. Leſſer Stock Gilliflower with a Lavender Leaf, and a worn-out Flower.

The 1ſt Sort grows naturally in *Italy*; this was formerly in greater Plenty in the *Engliſh* Gardens than at preſent, having been long neglected becauſe the Flowers were ſingle, and made but little Appearance; however, as the Flowers have a very grateful Scent, the Plant is worthy of a Place in every good Garden. This riſes with an upright Stalk a Foot and a Half high, garniſhed with Spear-ſhaped Leaves, which ſit cloſe to the Stalk; theſe are ſlightly indented on their Edges, and End in acute Points: The Flowers are produced in a looſe Thyrſe on the Top of the Stalks, they are compoſed of 4 Petals roundiſh and indented at their Points; they are of a deep purple Colour and ſmell very ſweet, eſpecially in the Evening or in cloudy Weather. It flowers in *June*, and the Seeds ripen the latter End of *Auguſt*. It is a biennial Plant, ſo that young Plants ſhould be raiſed every Year, to ſupply the Place of thoſe which decay: If the Seeds are permitted to ſcatter, the Plants will come up without Trouble in the Spring; and if the Seeds are ſown, the beſt Seaſon for it is the Autumn; becauſe thoſe ſown in Spring often fail if the Seaſon proves dry, or will remain a long Time in the Ground before they vegetate. This Plant ſhould have a loamy undunged Soil, in which it will thrive better than in rich Land.

There is a Variety of this with double Flowers, in ſome of the Gardens in *France*; but that which we have in *England*, is a Variety of the third Sort with unſavoury Flowers.

The 2d Sort has been generally ſuppoſed only a Variety of the firſt, differing in the Colour of the Flower, but is certainly a diſtinct Species; the Leaves are not ſo long, but much broader than thoſe of the firſt, and their Borders are entire; the Flowers are not quite ſo large, nor do they form ſo good Spikes; they are white, and have not ſo fine a Scent as the firſt. This is alſo a biennial Plant, requiring the ſame Treatment as the firſt.

The 3d Sort grows naturally in *Hungary* and *Auſtria*. This riſes with an upright Stalk near 2 Feet high, garniſhed with Spear-ſhaped Leaves, ending in acute Points, and ſharply indented on their Edges; they are of a dark green, and ſit cloſe to the Stalks; the Flowers grow in looſe Spikes on the Top of the Stalks, in ſome they are white, in others purple, and ſometimes both Colours ſtriped in the ſame Flower; theſe have no Odour, ſo are not deſerving of a Place in Gardens, but may be propagated as the two former.

From this Sort, the double white and purple Rockets have been accidentally obtained, which are much eſteemed for the Beauty of their Flowers; and if they had the agreeable Odour of the Garden Rocket, they would be ſome of the beſt Furniture for the Borders of the Flower Garden, but they are without Scent; however, for the Beauty of their Flowers, they are by ſome greatly eſteemed, therefore I ſhall here inſert the beſt Method of propagating them yet known.

Theſe Plants are naturally biennial, ſo the Plants with ſingle Flowers rarely ſurvive the ſecond Year; nor will thoſe with double Flowers continue much longer, ſo that unleſs young Plants are annually raiſed to ſupply the Place of the old ones, there will ſoon be a Want of them, which is what few Perſons are careful enough to obſerve, but thinking the Roots to be perennial, truſt to their putting out Offſets, or the Plants remaining after they have flowered; and finding them decay, are apt to think their Soil very improper for them, and are at a Loſs to account for their decaying; whereas, when the Plants have flowered, they have finiſhed their Period, and ſeldom continue to flower a ſecond Time from the ſame Root; though in poor Land, they will often put out a few weak Offſets, which may flower again, but ſeldom ſo ſtrong as the principal Roots; therefore thoſe who are deſirous to propagate theſe Plants, ſhould do it in the following Manner:

There ſhould be ſome ſtrong Roots of each Sort kept apart for this Purpoſe, which are not intended to flower; when theſe have ſhot up their Flower Stalks about 6 Inches high, they ſhould be cut cloſe to the Bottom; each of theſe may be divided in the Middle to make 2 Cuttings, which ſhould be planted in a ſoft, gentle, loamy Soil, to an Eaſt Expoſure, where they may have only the Morning Sun; and theſe may be planted pretty near together, ſo as to be covered with Hand or Bell Glaſſes, which ſhould be put over them, after the Cuttings have been well watered, and cloſely ſhut down, drawing the Earth round the Rim of the Glaſſes, to exclude the Air; then the Glaſſes ſhould be ſhaded with Mats every Day when the Sun is hot, and if the Cuttings are gently refreſhed with Water once in 7 or 8 Days, it will be ſufficient, for too much Moiſture will cauſe them to rot: When theſe are watered, the Glaſſes ſhould be cloſely ſhut down again as before, with this Management the Cuttings will put out Roots in 3 Weeks, and will begin to ſhoot above; then the Glaſſes ſhould be gently raiſed on one Side to admit the Air to them, and ſo gradually harden them to the open Air, to prevent their drawing up weak. When theſe have made good Roots, they ſhould be carefully removed, and planted in an Eaſt Border at about 8 or 9 Inches aſunder, obſerving to ſhade and water them until they have taken new Root; after which they will require no other Care, but to keep them clean from Weeds till the Autumn, when they may be tranſplanted into the Borders of the Pleaſure Garden, where they are deſigned to flower.

The Roots thus cut down, will ſend up more Stalks than before, and when theſe are of a proper Height, they may be cut off and treated the ſame Way; ſo that if the Roots are ſound, there may be 3 Crops of theſe Cuttings taken from them, and by ſo doing, the old Roots may be continued much longer than if they are permitted to flower, and by this Management there may be always a Supply of good Plants for the Flower Garden.

Theſe Plants are very ſubject to canker and rot when they are planted in a light rich Soil, but in poor ſtrong Ground, I have ſeen them thrive and flower in the utmoſt Perfection, where the Stems of Flowers have been as large, and the Flowers as fair as the fineſt double Stock-gilliflowers. Their Seaſon of Flowering is in *June*, and I have frequently raiſed young Plants from the Stalks after the Flowers have decayed, by cutting them in Lengths, and planting them in the Manner before directed; but theſe ſeldom make ſo good Plants as the young Cuttings, nor are they ſo certain to grow, therefore the other are to be preferred.

The 4th Sort grows naturally in *Hungary*. This is much cultivated in the Gardens Abroad, for the great Fragrancy of its Flowers, which in the Evening is ſo ſtrong, as to perfume the Air to a great Diſtance, eſpecially where there are any Number of the Plants. The Ladies in *Germany* are very fond of this Plant, and during the Seaſon of their Flowering, have the Pots placed in their Apartments every Evening, that they may enjoy the Fragrancy of their Flowers; for they have but little Beauty, being ſmaller than thoſe of the Garden Rocket, and of a pale Colour, but the Scent of their Flowers is much preferable to them; though in the Day Time if the Weather is clear, they have very little Odour; but when the Sun leaves them, their Fragrancy is expanded to a great Diſtance. To this Species it is ſuppoſed, that the Title of Dame's Violet was firſt applied.

This Sort is very rarely ſeen in the *Engliſh* Gardens: I ſuppoſe it has been neglected, becauſe the Flowers make no Appearance. It is a biennial Plant, like the Garden Rocket, which is propagated by Seeds in the ſame Manner; but the Plants are not quite ſo hardy, and are very ſubject to rot in Winter, eſpecially on a moiſt Soil, or in rich Land, where they are apt to grow very rank, ſo are ſoon injured by Wet and Cold in the Winter; therefore the Plants of this Sort ſhould be planted in a dry poor Soil, and a warm Situation; and if ſome of them are planted in Pots to be placed under a common Frame in Winter, where they may be ſheltered from hard Rains and Froſt, but enjoy the free Air at all Times when the Weather is mild, it will be a ſure Way to preſerve them.

The Leaves of this Sort are much larger than thoſe of the Garden Rocket, and of a paler green; the Stalks are cloſely ſet with briſtly Hairs, the Flowers grow in looſe Panicles at the Top of the Stalk, and appear about the ſame Time with the Garden Rocket.

The Seeds of the 5th Sort were ſent me from *Germany* without any Title, nor any Account of the Country from whence it came; but as it was ſent with the Seeds of ſome *Siberian* Plants, I ſuppoſe it came from the ſame Country. This is a biennial Plant, which riſes with a ſtrong branching Stalk between 2 and 3 Feet high, very hairy, garniſhed with oblong Heart-ſhaped Leaves, ending in acute Points, ſitting cloſe to the Stalk; they are 4 Inches long, and 1 and a Half broad at their Baſe, gradually diminiſhing to the Point, and ſlightly indented on their Edges; the upper Part of the Stalk divides into many Branches, garniſhed with ſmall Leaves of the ſame Shape with thoſe below, and terminated with looſe Panicles of ſingle large purple Flowers of great Fragrancy. This Sort flowered the End of *June* 1757, but the great Rains which fell in *Auguſt*, rotted the Plants before the Seeds were ripe.

The 6th Sort grows naturally in the warm Parts of *Europe*; this is annual, the Stalks riſe about 8 or 9 Inches high, branching out greatly on every Side in a confuſed Order; they are garniſhed with ſmall narrow indented Leaves, and are terminated by Cluſters of ſmall yellow Flowers, which make no Appearance.

The 7th Sort grows naturally in *Sicily*. This is an annual Plant, which ſeldom riſes more than 6 Inches high; the Stalk branches toward the Top into 3 or 4 ſmaller, which are terminated by ſmall white Flowers; the Leaves are 2 Inches long and 1 broad, cut almoſt to the Mid-rib on each Side, ſo as to reſemble a winged Leaf.

The 8th Sort grows naturally in *Africa*. This is an annual Plant with a very branching Stalk, which riſes about 9 Inches high, garniſhed with rough Spear-ſhaped Leaves ſawed on their Edges, and terminated by looſe Panicles of ſmall purple Flowers, which appear in *June* and *July*; theſe are ſucceeded by long Pods ſitting cloſe to the Stalks, filled with ſmall Seeds which ripen in *September*.

Theſe 3 Sorts are rarely cultivated, except in Botanick Gardens, for Variety. If the Seeds of theſe are permitted to ſcatter, the Plants will come up without Care, and only require to be kept clean from Weeds; or they may be ſown either in the Spring or the Autumn where they are to ſtand, for they do not bear tranſplanting well.

The 9th Sort is an annual Plant, which grows naturally in the South of *France*. This ſends out ſeveral Heart-ſhaped Leaves from the Root, which ſpread on the Ground, and are ſawed and hairy: The Stalk riſes 9 Inches high, branching toward the Top, garniſhed with Leaves of the ſame Shape, which embrace the Stalks with their Baſe; the Flowers are produced in looſe Panicles at the End of the Branches; they are of a lively purple Colour, and thoſe Plants which riſe in the Autumn, flower early in the Spring. If theſe Seeds are ſown in Autumn, they ſucceed much better than in the Spring.

The 10th Sort is a Native of the ſame Country as the former, but it is a biennial Plant, which riſes with a branching Stalk about a Foot high, garniſhed with narrow ſmooth Leaves, ending in acute Points, and indented on their Edges: The Flowers are produced toward the End of the Branches; they are ſmall, and of a worn-out purple Colour, ſo make but little Appearance. It flowers in *June*, and the Seeds ripen in the Autumn. This is propagated by Seeds, as the firſt Sort.

HEUCHERA. *Lin. Gen. Pl.* 283. Sanicle.

The *Characters* are,

The Flower is compoſed of 5 narrow Petals, inſerted in the Border of the 1 leaved Empalement. It hath 5 erect Awl-ſhaped Stamina, much longer than the Empalement, terminated by roundiſh Summits. It hath a roundiſh bifid Germen, with 2 erect Styles the Length of the Stamina, crowned by obtuſe Stigmas. The Germen turns to an oval pointed Capſule with 2 Horns, reflexed, having 2 Cells filled with very ſmall Seeds.

We have but one *Species* of this Genus, *viz.*

HEUCHERA. *Hort. Cliff.* 82. This is the *Mitella Americana, flore ſquallidè purpureo villoſo. Boerh. Ind. alt. Mitella* of *America*, with hairy Flowers, of a dirty purple Colour. *Herman* titles it *Cortuſa Americana flore ſquallidè purpureo. Par. Bat.* 131. *American* Sanicle with a dirty purple Flower.

This Plant grows naturally in *Virginia*, but is hardy enough to thrive in the open Air in *England*. It hath a perennial Root, which ſends out many Heart-ſhaped oval Leaves, indented into 4 or 5 Lobes, crenated on their Edges, of a lucid green, and ſmooth, from between theſe come out the Foot Stalks of the Flower, which are naked, and riſe a Foot high, dividing at Top into a looſe Panicle, ſuſtaining many ſmall hairy Flowers, of an obſolete purple Colour. This flowers in *May*, and the Seeds ripen in *Auguſt*.

It is propagated by parting the Roots in Autumn and ſhould be planted in a ſhady Situation; there is little Beauty in this Plant, but it is preſerved in ſome Gardens for Variety.

HIBISCUS. *Lin. Gen. Pl.* 756. *Ketmia. Tourn. Inſt. R. H.* 99. *Tab.* 26. *Syrian* Mallow.

The *Characters* are,

The Flower has a double Empalement, which is permanent; the outer is compoſed of 8 or 10 narrow Leaves, the inner is ſhaped like a Cup, and is of 1 Leaf, cut at the Brim into 5 acute Points. It hath 5 Heart-ſhaped Petals, which join at their Baſe into one. It hath many Stamina, joined in Form of a Column, within the Tube of the Flower, but which expand toward the Top, and are terminated by Kidney-ſhaped Summits. It has a round Germen with *ſlender Styles, longer than the Stamina, crowned by roundiſh Stigmas. The Germen turns to a Capſule with* 5 *Cells, opening in* 5 *Parts, incloſing Kidney-ſhaped Seeds.*

The *Species* are,

1. Hibiscus *foliis ovato-lanceolatis, ſupernè inciſo-ſerratis, caule arboreo. Hort. Cliff.* 350. *Hibiſcus* with oval Spear-ſhaped Leaves, whoſe upper Parts are cut and ſawed, and a Tree-like Stalk. *Ketmia Syrorum quibuſdam. C. B. P.* 316. The *Syrian Ketmia*, commonly called *Althæa frutex.*

2. Hibiscus *foliis cordato-quinquangularis obſoletè ſerratis, caule arboreo. Hort. Upſ.* 205. *Hibiſcus* with Heart-ſhaped Leaves, having 5 Angles, bluntly ſawed, and a Tree-like Stalk. *Ketmia ſinenſis, fructu ſubrotundo. Tourn. Inſt. R. H.* 100. *China Ketmia* with a roundiſh Fruit, commonly called *China* Roſe.

3. Hibiscus *foliis ſubpeltato-cordatis ſeptemangularibus, ſerratis hiſpidis. Hort. Cliff.* 349. *Hibiſcus* with Heart-ſhaped Target Leaves, having 7 Angles, ſawed, and ſet with prickly Hairs. *Ketmia Americana hirſuta, flore flavo, & ſemine moſchato. Tourn. Inſt. R. H.* 100. Hairy *American Ketmia* with a yellow Flower and muſky Seed, commonly called Muſk.

4. Hibiscus *foliis palmato-digitatis quinquepartitis, laciniis ſupernè dentatis, caule lævi. Hibiſcus* with fingered Leaves, which are divided into 5 Parts, indented toward the Top, and a ſmooth Stalk. *Ketmia Americana, folio Papayæ, flore magno flaveſcente, fundo purpureo, fructu erecto pyramidali hexagono, ſemine rotundulo ſapore fatuo. Boerh. Ind. alt.* 1. 272. *American Ketmia* with a Papaw Leaf, and a large yellow Flower, having a purple Bottom, a pyramidal ſix cornered erect Fruit, and round Seeds of a flat Taſte.

5. Hibiscus *foliis cordatis angulatis ſerratis tomentoſis, caule arboreo. Hibiſcus* with angular Heart-ſhaped ſawed woolly Leaves, and a Tree-like Stalk. *Malva arborea, folio oblongo acuminato veluto dentato & leviter ſinuato, flore ex rubro flaveſcente. Sloan. Cat.* 95. Tree Mallow with oblong, acute-pointed, indented Leaves, ſlightly ſinuated, and a reddiſh yellow Flower.

6. Hibiscus *foliis cordatis integerrimis. Flor. Zeyl.* 258. *Hibiſcus* with entire Heart-ſhaped Leaves. *Ketmia Indica tiliæ folio. Tourn. Inſt. R. H.* 100. *Indian Ketmia* with a Lime Tree Leaf.

7. Hibiscus *foliis ovatis acuminatis ſerratis glabris, caule arboreo. Flor. Zeyl.* 260. *Hibiſcus* with oval, pointed, ſawed, ſmooth Leaves, and a Tree-like Stalk. *Alcea Javanica arboreſcens, flore pleno rubicundo. Breyn. Cent.* 121. *Tab.* 56. Tree Vervain Mallow of *Java* with a double red Flower.

8. Hibiscus *foliis ſerratis, inferioribus ovatis indiviſis, ſuperioribus quinquepartitis, caule aculeato. Hibiſcus* with ſawed Leaves, the lower oval and undivided, the upper divided into 5 Parts, and a prickly Stalk. *Ketmia Indica vitis folio, magno flore. Tourn. Inſt.* 100. *Indian Ketmia* with a Vine Leaf, and large Flower.

9. Hibiscus *foliis ſerratis, inferioribus cordatis, mediis tripartitis, ſummis quinquepartitis, caule aculeato. Hibiſcus* with ſawed Leaves, the lower ones being Heart-ſhaped, the Middle divided into 3 Parts, the upper into 5, and a prickly Stalk. *Ketmia Ægyptiaca vitis folio, parvo flore. Tourn. Inſt. R. H.* 100. *Egyptian Ketmia* with a Vine Leaf and a ſmall Flower.

10. Hibiscus *foliis quinquelobatis ſerratis, caule glabro. Hibiſcus* with ſawed Leaves divided into 5 Lobes, and a ſmooth Stalk. *Ketmia Indica, Goſſypii folio, acetoſæ ſapore. Tourn. Inſt. R. H.* 100. *Indian Ketmia* with a Cotton Leaf, and the Taſte of Sorrel.

11. Hibiscus *foliis quinqueſido-palmatis, caule aculeato. Hort. Cliff.* 498. *Hibiſcus* with Hand ſhaped 5 pointed Leaves, and a prickly Stalk. *Ketmia Zeylanica, fici folio, perianthio oblongo integro. Hort. Elth.* 190. *Tab.* 157. *Ketmia* of *Ceylon* with a Fig Leaf, and an oblong entire Perianthium.

12. Hibiscus *foliis quinquepartitis, lobis ovato-lanceolatis hirſutis crenatis, caule ſpinoſiſſimo. Hibiſcus* with Leaves divided into 5 Lobes, which are oval, Spear-ſhaped, hairy, and crenated, and a very prickly Stalk. *Ketmia Indica aculeata, foliis digitatis. Tourn. Inſt.* 101. Prickly *Indian Ketmia* with Hand-ſhaped Leaves.

13. Hibiscus *foliis cordatis hirſutis crenatis, floribus lateralibus, caule arboreo ramoſo. Hibiſcus* with Heart-ſhaped, hairy, crenated Leaves, Flowers growing from the Sides of the Branches, and a Tree-like branching Stalk. *Ketmia Americana fruteſcens foliis ſubrotundis crenatis hirſutis, flore luteo. Houſt.* Shrubby *American Ketmia* with roundiſh, hairy, crenated Leaves, and a yellow Flower.

14. Hibiscus *foliis, oblongo-cordatis glabris, denticulatis, ſubtus incanis, floribus ampliſſimis. Hibiſcus* with oblong, Heart-ſhaped, ſmooth, indented Leaves, hoary on their under Side, and very large Flowers.

15. Hibiscus *foliis quinque partito pedatis, calycibus inferioribus latere rumpentibus. Lin. Sp. Plant.* 696. *Hibiſcus* with Leaves like a Hand, divided into 5 Parts, and the lower Empalement torn Sideways. *Ketmia Braſilienſis, folio ficûs, fructu pyramidato ſulcato. Tourn. Inſt. R. H.* 100. *Ketmia* of the *Braſils* with a Fig Leaf, and a pyramidal furrowed Fruit.

16. Hibiscus *foliis inferioribus cordatis angulatis, ſuperioribus ſubhaſtatis, floribus ſubnutantibus, piſtillo cernuo. Lin. Sp. Plant.* 697. *Hibiſcus* with lower Leaves, Heart-ſhaped and angular, the upper ones ſomewhat Spear-ſhaped, nodding Flowers, and a recurved Piſtil. *Ketmia paluſtris minor, folio anguſto, flore parvo purpuraſcente, fructu depreſſo pentagono. Zannich. Venet.* 155. *Tab.* 91. Smaller Marſh *Ketmia* with a narrow Leaf, a ſmall purpliſh Flower, and a five-cornered depreſſed Fruit.

17. Hibiscus *foliis ovatis acuminatis ſerratis, caule ſimpliciſſimo, petiolis floriferis. Hort. Upſ.* 205. *Hibiſcus* with oval pointed ſawed Leaves, a ſingle Stalk, and Foot Stalks having Flowers. *Ketmia Africana Populi folio. Tourn. Inſt.* 100. *African Ketmia* with a Poplar Leaf.

18. Hibiscus *caule herbaceo ſimpliciſſimo, foliis ovatis ſubtrilobis, ſubtus tomentoſis, floribus axillaribus. Lin. Sp. Pl.* 693. *Hibiſcus* with a ſingle herbaceous Stalk, oval Leaves, having 3 Lobes, woolly on their under Side. *Ketmia paluſtris flore purpureo. Tourn. Inſt.* 100. Marſh *Ketmia* with a purple Flower.

19. Hibiscus *foliis tripartitis inciſis, calycibus inflatis. Hort. Upſal.* 206. *Hibiſcus* with tripartite cut Leaves, and a ſwollen Empalement. *Ketmia veſicaria vulgaris. Tourn. Inſt.* Common Bladder *Ketmia*, called *Venice* Mallow, or Flower of an Hour.

20. Hibiscus *foliis tripartitis dentatis, lobis anguſtio-*

ribus caule hirſuto calycibus inflatis. Hibiſcus with tripartite indented Leaves, having narrower Lobes, a hairy Stalk, and ſwollen Empalements. *Ketmia veſicaria Africania. Tourn. Inſt.* 101. *African* Bladder *Ketmia.*

21. Hibiscus *foliis tripartitis, lobis linearibus pinnatodentatis calycibus inflatis. Hibiſcus* with triparite Leaves, having very narrow Lobes, indented and winged, and a ſwollen Empalement. *Ketmia Africana veſicaria, foliis profundiùs inciſis vix crenatis. Boerh. Ind. alt. African* Bladder *Ketmia* with Leaves more deeply cut, and ſlightly crenated.

22. Hibiscus *foliis inferioribus trilobis, ſummis, quinquepartitis obtuſis crenatis calycibus inflatis, caule hiſpido. Hibiſcus* with under Leaves, having 3 Lobes, the upper ones being cut into 5 obtuſe Segments, which are crenated, ſwollen Empalements, and a prickly Stalk.

23. Hibiscus *foliis cordatis-crenatis, angulis lateralibus extimis parvis, caule arboreo. Hort. Cliff.* 349. *Hibiſcus* with Heart-ſhaped crenated Leaves, whoſe outward lateral Angles are ſmall, and a Tree-like Stalk. *Malvaviſcus arboreſcens, flore miniato clauſo. Hort. Elth.* 210. *Tab.* 170. Tree-like viſcous ſeeded Mallow, with a cloſed ſcarlet Flower.

24. Hibiscus *foliis lanceolatis rigidis denticulatis, floribus alaribus, pedunculis longiſſimis, capſulis lignoſis. Hibiſcus* with ſtiff, Spear-ſhaped, indented Leaves, Flowers proceeding from the Wings of the Stalks, very long Foot Stalks, and woody Capſules. *Alcea floridana quinquecapſulari, laurinis foliis leviter crenatis, ſeminibus coniferarum inſtar alatis. Pluk. Alm.* Vervain Mallow of *Florida* with a five celled Capſule, Bay Leaves lightly crenated, and Seeds winged like thoſe of the coniferous Tribe, commonly called Loblolly Bay in *America.*

The 1ſt Sort is commonly called *Althæa frutex* by the Nurſery Gardeners who propagate the Shrubs for Sale, of this there are 4 or 5 Varieties, which differ in the Colour of their Flowers; the moſt common hath pale purple Flowers with dark Bottoms, another hath bright purple Flowers with black Bottoms, a 3d hath white Flowers with purple Bottoms, a 4th variegated Flowers with dark Bottoms, and a 5th pale yellow Flowers with dark Bottoms, but the laſt is very rare at preſent in the *Engliſh* Gardens; there are alſo 2 with variegated Leaves, which are by ſome much eſteemed.

This grows naturally in *Syria,* from whence it has been introduced to the Gardens, and is one of the great Ornaments of the Autumn Seaſon to a Garden. It riſes with a ſhrubby Stalk to the Height of 6 or 7 Feet, ſending out many woody Branches, covered with a ſmooth gray Bark, and garniſhed with oval Spear-ſhaped Leaves, whoſe upper Parts are frequently divided into 3 Lobes, which are ſawed; theſe are placed alternately on the Branches, ſtanding on ſhort Foot Stalks. The Flowers come out from the Wings of the Stalks at every Joint of the ſame Year's Shoot, they are large, and ſhaped like thoſe of the Mallow, having 5 large roundiſh Petals, which join at their Baſe, and ſpread open at the Top, in Shape of an open Bell; theſe appear in *Auguſt,* and, if the Seaſon is not too warm, there will be a Succeſſion of Flowers Part of *September*; theſe are ſucceded by ſhort Capſules with 5 Cells filled with Kidney-ſhaped Seeds, but unleſs the Seaſon proves warm, they will not ripen in this Country.

It is propagated by Seeds, which ſhould be ſown in Pots filled with light Earth the latter End of *March,* and if they are plunged into a gentle Heat, it will greatly forward the Growth of the Seeds. When the Plants are come up, they muſt be inured to the open Air, and in *May* the Pots may be plunged into the Ground, in a Border expoſed to the Eaſt, where they may have the Morning Sun; the Reaſon of my adviſing the Pots to be plunged into the Ground, is to prevent the Earth from drying ſo faſt as it would do when the Pots ſtand on the Surface, ſo that the Plants will not require ſo much Water in Summer; theſe Plants will require no other Culture, but to keep them clean from Weeds, and in very dry Weather to refreſh them with Water during the firſt Summer, but in Autumn it will be proper to remove the Pots under a common Frame to ſcreen them from the Froſt, or where there is not ſuch Conveniency, they may be plunged cloſe to a Hedge, Pale, or Wall, to a good Aſpect, and in ſevere Froſt, they ſhould be covered with Mats, Straw, or other light Covering; for although theſe Plants, when they have obtained Strength, will reſiſt the Cold of our Winters, yet the young Plants, whoſe Shoots are tender, are very often injured by the firſt Froſt of Autumn, ſo that if they are not ſcreened the firſt Year, they are often killed to the Ground. Toward the latter End of *March* will be a good Time to tranſplant theſe Plants, at which Time a Spot of light Ground muſt be prepared to receive them, which ſhould be divided into Beds 4 Feet broad, with Paths of 2 Feet broad between; then the Plants ſhould be ſhaken out of the Pots with the Earth about them, and ſeparated with Care, for their Roots are very tender, and apt to break with little Force; theſe ſhould be planted at about 9 Inches aſunder in the Beds, ſo that if 4 Rows are planted in each Bed, there will be 6 Inches allowed between the Outſide Rows and the Paths. The Ground ſhould be gently cloſed about the Roots to prevent the Air penetrating to their Roots, and if a little old Tanners Bark, or Mulch is laid over the Surface of the Beds, it will prevent the Earth from drying, and be of great Uſe to the Plants; during the following Summer they muſt be kept clean from Weeds, and if the following Winter ſhould prove ſevere, it will be prudent to cover the Plants again in Autumn, eſpecially if they ſhoot late in the Seaſon, or the Autumn proves cold and moiſt, for then the Plants will be in great Danger of having their Tops killed; in theſe Beds the Plants may remain two Years, by which Time they will be fit to tranſplant where they are deſigned to remain, for if they are kept longer in the Nurſery, they will not remove ſo well. The beſt Time for tranſplanting theſe Plants, is the End of *March,* or the Beginning of *April,* for they ſeldom begin to ſhoot till the End of *April,* or the Beginning of *May*; they ſhould have a light Soil, not too wet, for in ſtrong Land their Stems grow moſſy, and they never thrive after.

Theſe Plants may alſo be propagated by Cuttings, which, if planted the latter End of *March,* in Pots filled with light Earth, and plunged into a gentle Heat, will take Root, but the Plants ſo raiſed are not ſo good as the Seedlings. The ſeveral Varieties may be propagated by grafting upon each other, which is the common Method of propagating the Sorts with ſtriped Leaves.

The 2d Sort grows naturally in *India,* from whence the *French* firſt carried the Seeds to their Settlements in the *Weſt Indies,* and the Inhabitants of the *Britiſh* Colonies there have been ſupplied with the Seeds from them, ſo have given it the Title of *Martinico* Roſe; of this there are the double and ſingle flowering, which from the Seeds of the double, the ſingle is frequently produced, but the Seeds of the ſingle ſeldom vary to the double. The Flowers of theſe Plants alter in their Colour, for at their firſt Opening they are white, then they change to a bluſh Roſe Colour, and as they decay they turn to a purple. In the *Weſt-Indies,* all theſe Alterations happen the ſame Day, as I ſuppoſe the Flowers in thoſe hot Countries, are not of longer Duration, but in *England,* where the Flowets laſt a Week in Beauty, the Changes are not ſo ſudden.

This Plant hath a ſoft ſpongy Stem, which, by Age, becomes ligneous and pithy. It riſes to the Height of 12 or 14 Feet, ſending out Branches on every Side, toward the Top, which are hairy, and garniſhed with Heart-ſhaped Leaves, cut into 5 acute Angles on their Borders, and ſlightly ſawed on their Edges, of a lucid green on their upper Side, but pale below, ſtanding alternately on pretty long Foot Stalks. The Flowers are produced from the Wings of the Stalk, like thoſe of the 1ſt Sort; the ſingle one is compoſed of 5 large Petals, which ſpread open, and are firſt white, but afterwards change in the Manner before-mentioned; theſe are ſucceeded by ſhort, thick, blunt Capſules, which are very hairy, having 5 Cells, which contain many ſmall Kidney-ſhaped Seeds, having a fine Plume of fibrous Down adhering to them.

This Sort is propagated by Seeds, which muſt be ſown on a hot Bed in the Spring, and when the Plants are fit to remove, they ſhould be each planted in a ſeparate ſmall Pot filled with Kitchen Garden Earth, and plunged into a moderate hot Bed, where they muſt be ſhaded till they have taken new Root, then they muſt be treated as other Plants from warm Countries, but not too tenderly, for they require a large ſhare of Air in warm Weather, otherwiſe they will draw up very weak; theſe Plants ſhould not be quite expoſed to the open Air the firſt Seaſon, and the firſt Winter will require the Warmth of a moderate Stove, but as they get more Strength, they may be treated with leſs Care, for they will bear the open Air in Summer, in a warm ſheltered Situation, and will live through the Winter in a very good Green-houſe, provided they have not too much Wet, but the Plants thus hardily treated, will not make ſo great Progreſs, nor flower ſo well as with a little additional Warmth, and if they are too tenderly managed, they will draw up weak, ſo will be leſs likely to flower. This Sort uſually flowers in *England* in *November,* ſo that it keeps to the uſual Time of flowering in its native Country.

The 3d Sort grows naturally in the *Weſt-Indies,* where it is commonly known by the Title of Muſk; the *French* cultivate great Quantities of theſe Plants in their *American* Iſlands, the Seeds of which are annually ſent to *France* in great Quantities, ſo that they certainly have ſome Way of rendering it uſeful, as it ſeems to be a conſiderable Branch of Trade. This riſes with an herbaceous Stalk about 3 Feet high, ſending out 2 or 3 Side Branches, garniſhed with large Leaves cut into 6 or 7 Angles, which are acute, and ſawed on their Edges; theſe ſtand on long Foot Stalks, and are placed alternately. The Stalks and Leaves of this are very hairy. The Flowers come out from the Wings of the Stalk on pretty long Foot Stalks, which ſtand erect, they are large, of a Sulphur Colour, with dark purple Bottoms, and are ſucceeded by pyramidal 5 cornered Capſules, which open in 5 Cells, filled with large Kidney-ſhaped Seeds of a very muſky Odour.

This Sort ſeldom lives more than one Year in *England,* but in its native Country will laſt two. It is propagated by Seeds, which, if ſown on a good hot Bed in the Spring, and the Plants afterward planted in Pots filled with light Earth, and plunged into a freſh hot Bed, treating them afterward as the Amaranthus, they will flower in *July,* and their Seeds will ripen in Autumn.

The 4th Sort grows naturally in both the *Indies*; this riſes with an herbaceous ſmooth Stalk, 3 or 4 Feet high, garniſhed with Leaves, divided into 5 Segments, almoſt to the Bottom, the middle Part being 4 Inches long, and half an Inch broad, the 2 upper lateral Segments about 3 Inches long, and the ſame Breadth; theſe are indented at their Extremities, but the 2 lower Segments are not much more than an Inch long; theſe have Foot Stalks 4 Inches long. The Flowers are produced from the Wings of the Stalks toward the Top, ſtanding on ſhort Foot Stalks, they are compoſed of 5 large Sulphur-coloured Petals, which, when open, ſpread 5 Inches wide, they have a dark purple Bottom, with a Column of Stamina, and Styles riſing in the Center, and are ſucceeded by large pyramidal 5 cornered Seed Veſſels, opening in 5 Cells, filled with pretty large Kidney-ſhaped Seeds, which have little Smell or Taſte.

It is propagated by Seeds as the former Sort, and if ſo managed, will produce Flowers and perfect Seeds the ſame Seaſon, but the Plants may be continued through the Winter in a moderate Warmth, though few Perſons are at the Trouble of preſerving the Plants, after they have ripened their Seeds, becauſe the young Plants make a much better Appearance.

The 5th Sort grows naturally in the *Weſt-Indies,* where it riſes with a woody Stalk, 7 or 8 Feet high, ſending out many Side Branches toward the Top, covered with a whitiſh Bark, and garniſhed with angular Heart-ſhaped Leaves, which are woolly, they are about 4 Inches long, and 3 broad toward their Baſe, ending in acute Points, and have ſeveral longitudinal Veins. The Flowers are produced from the Wings of the Stalk, upon long Foot Stalks, they are compoſed of 5 roundiſh Petals, joined at their Baſe, but open above, and of a yellow Colour, turning to a red as they decay; theſe are ſucceeded by large, obtuſe, five cornered hairy Seed Veſſels, which open in 5 Cells filled with larged Kidney-ſhaped Seeds.

This is propagated by Seeds, which muſt be ſown on a hot Bed in the Spring, and the Plants afterward treated as the two laſt mentioned, during the firſt Summer, but in Autumn they muſt be plunged into the Tan Bed in the Stove, where they ſhould conſtantly remain, and be treated as other tender Plants from the ſame Country, giving them but little Water in Winter; the ſecond Year the Plants will flower, but they have not as yet perfected Seeds in *England*.

The 6th Sort grows naturally in both *Indies*; this riſes with a woody pithy Stem, 8 or 10 Feet high, dividing into ſeveral Branches toward the Top, covered with a woolly Down, and garniſhed with round Heart-ſhaped Leaves, ending in acute Points, they are of a lucid green on their upper Side, and hoary on their under, full of large Veins, and are placed alternately on the Stalks. The Flowers are produced at the End of the Branches, in looſe Spikes, they are of a whitiſh yellow Colour, and are ſucceeded by ſhort acuminated Capſules, opening in 5 Cells, filled with large Kidney-ſhaped Seeds.

This Sort is propagated the ſame Way, and the Plants require the ſame Treatment as the 5th, and flower the ſecond Year, provided they are brought forward, otherwiſe they will not flower before the third or fourth Seaſon, but they will bear the open Air in Summer, in a warm Situation, though they will not make great Progreſs there.

The 7th Sort grows naturally on the Coaſt of *Malabar*, from whence I received the Seeds; this riſes with a woody Stalk, 12 or 14 Feet high, dividing into many ſmall Branches toward the Top, garniſhed with oval ſawed Leaves, ending in acute Points, they are of a lucid green above, but pale on their under Side, and placed without Order. The Flowers come out from the Side of the Branches, at the Wings of the Leaves, on pretty long Foot Stalks, they are compoſed of many oblong roundiſh Petals of a red Colour, which expand like the roſe, the Flowers being as large when fully blown, as the common red Roſe, and as double. This is a perennial Plant, which is propagated by Seeds as thoſe laſt mentioned, and the Plants muſt conſtantly be kept in the Tan Bed in the Stove, giving them a large Share of Air in warm Weather, and but little Water in Winter.

The 8th Sort is an annual Plant, which riſes with an upright Stalk, 7 or 8 Feet high; the lower Leaves are oval, ſerrated, and entire, but the upper Leaves are divided almoſt to the Foot Stalk, into 5 Spear-ſhaped Segments, like the Fingers of a Hand, ſtanding on very long Foot Stalks, which have Thorns at their Baſe, and are ſharply ſawed on their Edges. The Flowers come out from the Wings of the Stalks, they are large, of a pale Sulphur Colour, with a dark purple Bottom, and are ſucceeded by oval acuminated prickly Capſules, which open in 5 Cells, filled with large Kidney-ſhaped Seeds.

This Sort is propagated by Seeds, which muſt be ſown on a hot Bed, and the Plants treated as the third Sort, and when they are grown too tall to ſtand under the Frames, they muſt be placed in the Stove, where they will flower in *Auguſt*, and the Seeds will ripen in Autumn.

The 9th Sort is near of Kin to the 8th, but the Stalks do not grow ſo tall, the lower Leaves are Heart-ſhaped and entire, the middle Leaves are divided into 3, and the upper into 5 Segments, almoſt to the Foot Stalks, they are ſawed on their Edges, and the Stalk is prickly. The Flowers come out from the Wings of the Stalks, they are of a very pale Sulphur, with dark Bottoms, but are not ſo large as thoſe of the laſt.

This is propagated by Seeds as the eighth, and the Plants require the ſame Treatment. It flowers in *July* and *Auguſt*, and the Seeds ripen in Autumn.

The Bark of both theſe Plants is full of ſtrong Fibres, which I have been informed the Inhabitants of the *Malabar* Coaſt prepare and make into a ſtrong Cordage, and by what I have obſerved it may be wrought into fine ſtrong Thread of any Size, if properly manufactured.

The 10th Sort grows naturally in the *Weſt-Indies*, where the Inhabitants uſe the green Pods to add an acid Taſte to their Viands; there are two Varieties of this, one with a light green, and the other a deep red Pod, which always maintain their difference, but as there is no other Difference but that of the Colour of their Pods, they do not deſerve ſeparate Titles. This riſes with an herbaceous Stem, about 3 Feet high, ſending out ſeveral lateral Branches, garniſhed with ſmooth Leaves, divided into 5 Lobes. The Flowers come out from the Side of the Branches, they are of a dirty white, with dark purple bottoms, and are ſucceeded by obtuſe Seed Veſſels, divided into 5 Cells, filled with Kidney-ſhaped Seeds.

This Sort is propagated as the third, and will flower and perfect Seeds the ſame Year, ſo is ſeldom preſerved longer in *England*.

The 11th Sort is a Native of *Ceylon*; this riſes with an herbaceous Stalk, which is prickly, from 2 to 3 Feet high, dividing upward into ſmall Branches, garniſhed with Hand-ſhaped Leaves, divided into 5 Parts. The Flowers come out from the Wings of the Leaves, they are ſmall and white, with purple Bottoms, and are ſucceeded by ſhort obtuſe Capſules with 5 Cells filled with Kidney-ſhaped Seeds. The Seeds of this Sort were ſent me by Dr. *Breynius* of *Dantzick*.

This Plant is annual, ſo muſt be treated as the third.

The 12th Sort is alſo annual with us; this riſes with an herbaceous Stalk, 3 Feet high, which hath prickly Hairs, and divides into Branches upward, garniſhed with Hand-ſhaped Leaves, divided into 5 Lobes, which are Spear-ſhaped, ending in acute Points, they are hairy, and crenated on their Edges, ſtanding on very long Foot Stalks, the Flowers come out from the Wings of the Stalk, and are very like thoſe of the third; this Plant requires the ſame Culture as the third Sort. The Seeds of this were ſent me by Dr. *Juſſieu*, from *Paris*.

The 13th Sort was diſcovered by the late Dr. *Houſtoun* in the Iſland of *Cuba*, from whence he ſent me the Seeds. This riſes with a woody Stalk 12 or 14 Feet high, ſending out many lateral Branches, garniſhed with hairy, Heart-ſhaped Leaves, crenated on their their Edges; the Flowers come out ſingle from the Wings of their Leaves; they are of a very bright yellow Colour, but not ſo large as either of the former Sorts, and are ſucceeded by ſhort Capſules ending in acute Points, divided into 5 Cells, filled with Kidney-ſhaped Seeds. This Plant is tender, ſo requires the ſame Treatment as the fifth, and other tender Kinds, with which Management it flowers and produces good Seeds here.

The 14th Sort hath a perennial Root, but an annual Stalk. The Seeds were ſent me from the *Bahama Iſlands*, which ſucceeded in the *Chelſea* Garden, where the Plants produced Plenty of Flowers, but did not ripen their Seeds. This riſes with ſeveral Stalks from the Root, 4 Feet high, garniſhed with oblong Heart-ſhaped Leaves, ending in acute Points; they are ſmooth, and of a light green on their upper Side, but hoary on their under, and are ſlightly indented on their Edges, ſtanding upon long Foot Stalks; the Flowers are produced on the Top of the Stalks, they are very large, and of a light purple Colour with dark Bottoms, and are ſucceeded by ſhort Capſules divided into 5 Cells, filled with Kidney-ſhaped Seeds.

This is propagated by Seeds, which muſt be ſown on a moderate hot Bed in the Spring, and when the Plants are fit to remove, they ſhould be each planted in a ſeparate ſmall Pot, and plunged into a hot Bed, treating them as the other tender Sorts, but allowing them a greater Share of Air in warm Weather; for theſe may be brought to ſtand in the open Air in Summer, but unleſs the Seaſon is very warm they will not flower; for thoſe which flowered in the *Chelſea* Garden, were plunged into a Tan Bed whoſe heat was declining, under a deep Frame, where they produced Plenty of Flowers, but they came too late to ripen Seeds. The Stalks decay in the Autumn, but if the Pots are ſheltered under a hot Bed Frame, they will continue ſeveral Years, and put out new Stalks in the Spring.

The 15th Sort is very common in the *Weſt-Indies*, where the Inhabitants cultivate it for the Pods or Seed Veſſels, which they gather green to put into their Soups; theſe, having a ſoft viſcous Juice, add a Thickneſs to their Soups, and renders them very palatable. It riſes with a ſoft herbaceous Stalk 3 Feet high, dividing upward into many Branches, garniſhed with Hand-ſhaped Leaves, divided into 5 Parts; the Flowers are produced from the Wings of the Stalk, they are of a pale Sulphur Colour, with dark purple Bottoms, but are ſmaller than either of the other Sorts, and of very ſhort Duration, opening in the Morning with the riſing Sun, but are faded long before Noon in warm Weather. Theſe are ſucceeded by Capſules of very different Forms, in the different Varieties; in ſome the Capſules are not thicker than a Man's Finger, and 5 or 6 Inches long; in others they are very thick, and not more than 2 or 3 Inches long; in ſome Plants they grow erect, in others they are rather inclined; and theſe Varieties are conſtant, for I have many Years cultivated theſe Plants, and have not found them vary.

This Sort is propagated by Seeds as the third, and the Plants require the ſame Treatment, for they are too tender to thrive in the open Air in this Country; I have often tranſplanted the Plants into warm Borders, after they have acquired proper Strength; and have ſometimes in very warm Seaſons had them thrive for a ſhort Time, but the firſt cold bad Weather their Leaves have all dropped off, and then they have decayed gradually, ſo that they have but rarely flowered, and have never in the beſt Seaſons perfected their Seeds; therefore thoſe who are inclinable to cultivate theſe Plants, muſt conſtantly ſhelter them in bad Weather.

The 16th Sort grows naturally near *Venice*, in moiſt Land; this hath a perennial Root, and an annual Stalk, which riſes about 3 Feet high; the lower Leaves are angular and Heartſhaped, but the upper are Spear-ſhaped, and ſlightly indented on their Edges; the Flowers are produced from the Wings of the Leaves, upon long Foot Stalks; they are ſmall, and of a purple Colour with a dark Bottom, and are ſucceded by 5 cornered compreſſed Capſules, filled with Kidney-ſhaped Seeds.

This Sort is propagated by Seeds, which muſt be ſown on a hot Bed, and the Plants ſhould be treated as the 14th Sort, otherwiſe they will not flower; for although the Roots will live in the full Ground here, yet the Summers are not warm enough to bring them to flower. I have ſome of the Roots which have remained 7 Years, putting up many Stalks, which riſe upward of 2 Feet, and have the Flower Buds formed on their Tops, but theſe appear ſo late in the Seaſon, that they never have opened.

The 17th Sort grows naturally in *North America*; this hath a perennial Root, and an annual Stalk; the Roots of this Sort will live in full Ground, but unleſs the Summer is warm, the Flowers ſeldom open. It riſes with ſingle Stalks from the Root, 2 Feet high or more; the Leaves are oval and ſawed, the Flowers are large and purple.

The 18th Sort grows naturally in *North America*, in moiſt Ground. This hath a perennial Root, and an annual Stalk like the former, which is herbaceous and never branches; the Leaves are oval, with 3 Lobes not deeply divided; they are of a bright green on their upper Side, but woolly on their under; the Flowers are produced from the Wings of the Stalk, they are large, and of a bright purple Colour. This Sort like the former, ſeldom flowers in the open Air here, unleſs the Summer proves very warm, but the Roots will live in the full Ground, if planted in a ſheltered Situation. The only Way to have theſe Plants flower in this Country, is to keep the Roots in Pots, and ſhelter them under a Frame in Winter, and in the Spring plunge them into a gentle hot Bed, which will cauſe them to put out their Stalks early; and when the Stalks are ſo high as to reach the Glaſſes, the Pots may be removed into a Glaſs Caſe, where, if they are duly ſupplied with Water, and have plenty of Air in hot Weather, they will flower very well in *July*, and in warm Seaſons will ripen their Seeds.

The 19th Sort is an annual Plant, which grows naturally in ſome Parts of *Italy*, and has been long cultivated in the *Engliſh* Gardens, by the Title of *Venice Malva*. *Gerard* and *Parkinſon* title it *Alcea Veneta*, and *Flos Horæ*, or Flower of an Hour, from the ſhort Duration of its Flowers, which in hot Weather continue but few Hours open; however, there is a Succeſſion of Flowers which open daily for a conſiderable Time, ſo that a few of theſe Plants may be allowed a Place in every curious Garden.

It riſes with a branching Stalk a Foot and a Half high, having many ſhort Spines which are ſoft, and do not appear unleſs cloſely viewed; the Leaves are divided into 3 Lobes, deeply jagged almoſt to the Midrib; theſe Jags are oppoſite, and the Segments are obtuſe; the Flowers come out at the Joints of the

Stalks on pretty long Foot Stalks, having a double Empalement, the outer being compoſed of 10 long narrow Leaves, which join at their Baſe; the inner is of one thin Leaf, ſwollen like a Bladder, cut into 5 acute Segments at the Top, having many longitudinal purple Ribs, and is hairy; both theſe are permanent, and incloſe the Capſule after the Flower is paſt. The Flower is compoſed of 5 obtuſe Petals, which ſpread open at the Top, the lower Part forming an open Bell-ſhaped Flower; theſe have dark purple Bottoms, but are of a pale Sulphur Colour above, having the Stamina and Apices joined in a Column in the Center; after the Flower is paſt, the Germen turns to a blunt Capſule opening in 5 Cells, filled with ſmall Kidney-ſhaped Seeds. It flowers in *June*, *July*, and *Auguſt*, and the Seeds ripen about a Month after. This Sort is propagated by Seeds, which ſhould be ſown where the Plants are deſigned to remain, for they do not bear tranſplanting well; if the Seeds are ſown in Autumn, the Plants will come up early in the Spring, ſo will flower early in the Summer, and thoſe which are ſown in the Spring will ſucceed them; ſo that by ſowing them at three different Seaſons, they may be continued in Succeſſion till the Froſt ſtops them. Theſe require no other Culture, but to keep them clean from Weeds, and thin them where they are too cloſe; and if the Seeds are permitted to ſcatter, the Plants will come up full as well as when ſown, ſo that it will maintain its Situation, unleſs it is weeded out.

The 20th Sort grows naturally at the *Cape of Good Hope*; this is alſo an annual Plant which reſembles the former, but the Stalks grow more erect, are of a purpliſh Colour, and very hairy; the Leaves are compoſed of 3 Lobes, divided almoſt to the Foot Stalk; theſe are narrow, the middle Lobe ſtretching out more than twice the Length of the two Side Lobes, and they are but ſlightly indented on their Edges, whereas thoſe of the former are cut almoſt to the Mid-rib; the Flowers are larger and their colour deeper, than thoſe of the other.

The 21ſt Sort came from the *Cape of Good Hope*, and is very like the laſt mentioned, but differs in the Leaves, which are divided into very long narrow Lobes, very little indented on their Edges. The Difference in theſe three Plants is conſtant, for I have propagated them 30 Years, and have never found either of them vary.

The Seeds of the 22d Sort were ſent me from the *Cape of Good Hope*, a few Years paſt. This is alſo an annual Plant, having at firſt Sight ſome Reſemblance of the other Sorts before-mentioned; but it riſes with ſtrong hairy branching Stalks, garniſhed with much broader Leaves than either of the former, the lower being divided into 3, the upper into 5 obtuſe Lobes, crenated on their Edges; the Flowers are large, but of a paler Colour than thoſe of the other. This has maintained the Difference 5 Years, ſo that there is no Doubt of its being a diſtinct Species.

All theſe are as hardy as the 19th Sort, ſo may be treated the ſame Way.

The 23d Sort grows naturally at *Campeachy*, from whence the late Dr. *Houſtoun* ſent me the Seeds. This differs ſo eſſentially from the other Species in its Fructification, as to deſerve another Title, for all the other have dry Capſules with 5 Cells, including many Kidney-ſhaped Seeds, but this hath a ſoft viſcous Berry, with a hard Shell incloſed, containing 5 roundiſh Seeds: It riſes with a ſhrubby Stalk 10 or 12 Feet high, dividing into many Branches, garniſhed with ſmooth Heart-ſhaped angular Leaves, crenated on their Edges; the Flowers come out from the Wings of the Stalks ſingly, ſtanding on ſhort Foot Stalks; they are compoſed of 5 oblong Petals, which are twiſted together and never expand; they are of a fine ſcarlet, and are ſucceeded by roundiſh Berries of a ſcarlet Colour when ripe, incloſing a hard Shell, which opens in 5 Cells, each containing a ſingle roundiſh Seed.

This Sort is generally propagated here by Cuttings, becauſe the Seeds do not often ripen here; if the Cuttings are planted in Pots filled with light Earth, and plunged into a gentle hot Bed, keeping the Air from them, they will ſoon take Root, and ſhould be gradually inured to bear the open Air. Theſe Plants require a moderate Stove to preſerve them through the Winter, and if they are kept warm in Summer, they will flower, and ſometimes ripen Fruit, though they may be placed abroad in a ſheltered Situation for 2 or 3 Months in Summer, but the Plants ſo treated ſeldom flower.

The 24th Sort grows naturally in *South Carolina*, from whence the late Dr. *Dale* ſent me Specimens and Seeds. This riſes with a woody Stalk 5 or 6 Feet high, dividing into ſeveral Branches upward, cloſely garniſhed with ſmooth Spear-ſhaped Leaves, ſitting cloſe to the Branches; they are 4 Inches long, one and a Half broad in the Middle, ſlightly indented on their Edges, and of a thick Conſiſtence; the Flowers come out from the Wings of the Branches, upon very long Foot Stalks; they are compoſed of 5 oblong yellow Petals, which ſpread open at the Top; in the Center is ſituated a great Number of Stamina, terminated by oblong Summits; theſe are joined at their Baſe to the Style, and form a ſhort Column, but ſpread open at the Top, filling the Mouth of the Tube; the Seed Veſſel divides into 5 Cells, each containing 2 Seeds.

This Plant grows naturally in Water, ſo is ſcarce to be kept alive in this Country: I raiſed ſeveral of the Plants, which continued till Winter, but not one of them ſurvived, though I placed ſome of them in the Stove, and ſupplied them well with Water.

HIERACIUM. *Lin. Gen. Pl.* 818. *Tourn. Inſt. R. H.* 469. *Tab.* 267. Hawkweed.

The *Characters* are,

It hath a Flower compoſed of many hermaphrodite Florets, included in one common ſcaly Empalement, whoſe Scales are narrow, and very unequal in their Length and Poſition; the Florets are equal and uniform, they have 1 Petal ſhaped like a Tongue, indented in 5 Parts at the Point, and placed Imbricatim over each other; theſe have each 5 ſhort hairy Stamina, terminated by cylindrical Summits. At the Bottom of the Petal is ſituated the Germen, ſupporting a ſlender Style, crowned by 2 recurved Stigmas; the Germen afterward becomes a ſhort 4 cornered Seed crowned with Down, ſitting in the Empalement.

There are a great Number of Species of this Genus, many of which grow naturally as Weeds in *England*, and the others are ſo in different Countries, therefore I ſhall only ſelect thoſe which are the moſt beautiful, and beſt worth cultivating from the Number.

1. HIERACIUM *foliis oblongo-ovatis dentatis tomentoſis, caule erecto ramoſo lanuginoſo.* Hawkweed with oblong, oval, woolly, indented Leaves, and an erect branching Stalk covered with Down. *Hieracium montanum tomentoſum. H. R. Blaſ.* Woolly Mountain Hawkweed.

2. HIERACIUM *caule ramoſo, foliis radicalibus ovatis dentatis, caulino minori. Hort. Cliff.* 388. Hawkweed with a branching Stalk, whoſe lower Leaves are oval and indented, and thoſe on the Stalks ſmaller. *Hieracium murorum, folio piloſiſſimo. C. B. P.* 129. Wall Hawkweed with a very hairy Leaf.

3. HIERACIUM *foliis integris, caule ſubnudo ſimpliciſſimo piloſo corymbifero. Hort. Cliff.* 388. Hawkweed with entire Leaves, and a ſingle hairy naked Stalk, terminated by a Corymbus of Flowers. *Hieracium hortenſe, floribus atro purpuraſcentibus. C. B. P.* 128. Garden Hawkweed with dark purple Flowers.

4. HIERACIUM *foliis radicalibus obovatis denticulatis, caulinis oblongis ſemiamplexicaulibus. Prod. Leyd.* 124. Hawkweed with oval indented Leaves at the Root, thoſe on the Stalks oblong, and half embracing them, *Hieracium Pyrenaicum folio cerinthes. Schol. Bot.* Pyrenean Hawkweed with a Honeywort Leaf.

5. HIERACIUM *foliis lanceolatis amplexicaulibus dentatis, floribus ſolitariis, calycibus laxis. Hort. Cliff.* 387. Hawkweed with Spear-ſhaped indented Leaves embracing the Stalks, Flowers growing ſingly, and looſe Empalements. *Hieracium Pyrenaicum, blattariæ folio, minus hirſutum. Tourn. Inſt.* 472. Pyrenean Hawkweed with a Moth Mullein Leaf, leſs hairy.

6. HIERACIUM *foliis amplexicaulibus cordatis ſubdentatis, pedunculis unifloris hirſutis, caule ramoſo. Hort. Cliff.* 387. Hawkweed with Heart-ſhaped indented Leaves embracing the Stalks, hairy Foot Stalks bearing one Flower, and a branching Stalk. *Hieracium Pyrenaicum rotundifolium amplexicaule. Schol. Bot.* Pyrenean Hawkweed, with round Leaves embracing the Stalks.

7. HIERACIUM *foliis oblongo-ovatis acutè dentatis ſubtus tomentoſis, caule nudo ſimplici umbellifero.* Hawkweed with oblong oval Leaves ſharply indented, and woolly on their under Side, and a ſingle naked Stalk, terminated by an Umbel of Flowers. *Hieracium foliis latis, leviter dentatis, ſubtus niveis. Sloan. Hort. Sicc.* Hawkweed with broad Leaves ſlightly indented, and of a Snow white Colour on their under Side.

The 1ſt Sort grows naturally on the *Apennine* Mountains; it ſends out from the Root many oblong, oval, indented Leaves, very woolly and white; from between the Leaves ariſe a branching Stalk, little more than a Foot high, covered over with a woolly Down, and garniſhed with downy Leaves of the ſame Shape as the lower, but leſs; theſe ſit very cloſe to the Stalks; the Flowers are produce ſingly at the End of each Branch; they are large and of a bright yellow, compoſed of many Florets, which are ſucceeded by 4 cornered, oblong, black Seeds, crowned with a white Down, which, when ripe, are, by the Elaſticity of the Down, drawn out of the Empalement, and by the firſt ſtrong Gale of Wind, wafted to a conſiderable Diſtance. The Flowers appear by the Beginning of *June*, and the Seeds ripen in about 5 or 6 Weeks after, but there is frequently a Succeſſion of Flowers till the Autumn.

It is propagated by Seeds, which ſhould be ſown in an Eaſt aſpected Border in *March*; and when the Plants come up, they muſt be kept clean from Weeds, till they are ſtrong enough to remove, which will be by the Beginning of *June*; then they ſhould be tranſplanted to a ſhady Border of undunged Ground, at 6 Inches Diſtance, obſerving to water them if the Weather ſhould prove dry, till they have taken new Root; after which, if they are kept clean from Weeds, they will require no other Culture: In Autumn they ſhould be tranſplanted where they are to remain; the following Summer they will flower and produce ripe Seeds, and the Roots will continue ſome Years, if not planted in a rich or moiſt Soil, which frequently occaſions their rotting in Winter. This Plant with its ſilvery Leaves, makes a pretty Variety in the Garden, ſo deſerves a Place, though the Flowers are not very remarkable for their Beauty.

The 2d Sort hath very hairy, oval, indented Leaves; the Stalks riſe about the ſame Height as the former, branching into ſeveral Diviſions, terminated by a large ſingle yellow Flower, of the Shape of the former. This flowers in *June*, and the Seeds ripen in *Auguſt*. It grows naturally in ſome Places in the North of *England*; it is a perennial Plant, and may be propagated as the former Sort.

The 3d Sort grows naturally in *Syria*, but has been long an Inhabitant of the *Engliſh* Gardens, where it is cultivated for its fine purple Flowers. This was formerly known by the Title of *Grim the Collier*, which was probably given it from the dark Colour of the Empalement.

This hath a perennial fibrous Root, which ſends out many oblong, oval, entire Leaves, between which ariſes a ſingle Stalk near a Foot high, naked toward the Bottom, and terminated by a Corymbus of Gold coloured Flowers, which appear in Succeſſion from the Beginning of *June* to *September*, and are ſucceeded by Seeds crowned with Down, which ripen in *Auguſt* and *September*. This Sort ſends out many Offſets from the Root, by which it is eaſily propagated, or it may be raiſed from Seeds as the firſt Sort: The beſt Time to tranſplant them is the Autumn. This will thrive in any Soil or Situation.

The 4th Sort grows naturally on the *Pyrenean* Mountains. It is a perennial Plant, whoſe lower Leaves are oval, indented, and of a grayiſh Colour; thoſe on the Stalks are ſmaller, but of the ſame Shape and Colour, and half embrace the Stalks with their Baſe; the Stalks riſe a Foot high, branching into ſeveral Diviſions, each being terminated by 1 yellow Flower. This is propagated by Seeds as the firſt Sort.

The 5th Sort grows on the *Pyrenees*; it hath a perennial Root, which ſends up ſeveral erect Stalks, garniſhed with Spear-ſhaped Leaves which are indented, and embrace the Stalks with their Baſe; the Flowers are produced from the Wings of the Stalks, on ſhort Foot Stalks, each ſuſtaining 1 large yellow Flower. This flowers in *June*, but ſeldom perfects Seeds here, ſo is propagated by parting the Roots in Autumn; it will thrive in any Situation.

The 6th Sort riſes with a branching Stalk a Foot and a Half high, garniſhed with Heart-ſhaped Leaves indented at their Baſe, where they embrace the Stalks; each Diviſion of the Branches terminates in a hairy Foot Stalk, ſuſtaining 1 large yellow Flower, which appears in *May*, and the Seeds ripen in *July*. This is a perennial Plant, which is propagated by Seeds as the firſt Sort, and requires the ſame Treatment.

The 7th Sort grows naturally in *Jamaica*, from whence the late Dr. *Houſtoun* ſent me the Seeds. This Plant ſends out ſeveral Side Branches from the Root, garniſhed with oblong, oval, indented Leaves, woolly on their under Side, with 1 prominent Midrib, and ſeveral branching tranſverſe Ribs; the Stalk is ſingle and naked, riſing about 6 Inches high, terminated by an Umbel of yellow Flowers.

This is propagated by Seeds, which muſt be ſown on a hot Bed, and the Plants afterward planted in ſeparate ſmall Pots filled with light Earth, and then plunged into a freſh hot Bed, treating them as other tender Plants. They muſt be placed in the Stove in Winter, and the Summer following they flower.

HILLS have many Uſes, of which I ſhall only mention two or three.

1ſt, They ſerve as Screens, to keep off the cold and nipping Blaſts of the Northern and Eaſtern Winds.

2dly, The long Ridges and Chains of lofty Mountains, being generally found to run from Eaſt to Weſt, ſerve to ſtop the Evagation of thoſe Vapours toward the Poles, without which they would all run from the hot Countries, and leave them deſtitute of Rain.

3dly, They condenſe thoſe Vapours, like Alembick Heads, into Clouds; and ſo by a Kind of external Diſtillation, give Origin to Springs and Rivers; and by amaſſing, cooling, and conſtipating them, turn them into Rain, and by that Means render the fervid Regions of the Torrid Zone habitable.

4thly, They ſerve for the Production of a great Number of Vegetables and Minerals, which are not found in other Places.

It hath been found by Experiment and Calculation, that Hills, though they meaſure twice as much as the plain Ground they ſtand upon, yet the Produce of the one can be no more than the other; and therefore, in purchaſing Land, the Hills ought not to be bought for more than their ſuperficial Meaſure, *i. e.* to pay no more for two Acres upon the Side of a Hill, than for one upon the Plain, if the Soil be equally rich.

It is true, that thoſe Lands that are hilly and mountainous, are very different as to their valuable Contents, from what are found in flat and plain Ground, whether they be planted, ſown or built upon; as for Example:

Suppoſe a Hill contains four equal Sides, which meet in a Point at Top; yet the Contents of theſe four Sides can produce no more Grain, or bear no more Trees, than the plain Ground on which the Hill ſtands, or than the Baſe of it; and yet by the Meaſure of the Sides, there may be double the Number of Acres, Rods, and Poles, which they meaſure on the Baſe or Ground Plot.

For as long as all Plants preſerve their upright Method of growing, hilly Ground can bear no more Plants in Number than the plain at the Baſe.

Again, as to Buildings on a Hill, the two Sides of a Hill will bear no more than the ſame Number of Houſes that can ſtand in the Line at the Baſe.

And as to Rails, or Park Pailing over a Hill, though the Meaſure be near double over the Hill to the Line at the Bottom, yet both may be incloſed by the ſame Number of Pales of the ſame Breadth.

HIPPOCASTANUM. *Tourn. Inſt. R. H.* 611. *Tab.* 382. *Eſculus. Lin. Gen.* 420. of Ἵππος, *Gr.* a Horſe, and *Caſtanea*, Lat. a Cheſnut.] Horſe Cheſnut; in *French*, *Marronier d'Inde.*

The *Characters* are,

The Flower hath a ſmall ſwelling Empalement of 1 *Leaf, indented in* 5 *Parts: It hath* 5 *Petals, narrow at their Baſe, where they are inſerted in the Empalement, but roundiſh at the Top, ſpreading open, and folded and waved on their Borders. It hath* 7 *Awl-ſhaped Stamina which decline, and are as long as the Petals, terminated by riſing Summits. It hath a roundiſh Germen, ſitting upon an Awl-ſhaped Style, crowned by an acute Stigma. The Germen becomes a thick roundiſh Capſule ſet with Thorns, opening in* 3 *Cells, incloſing* 1 *or* 2 *globular Nuts.*

We have but one *Species* of this Genus, *viz.*

HIPPOCASTANUM. Horſe Cheſtnut. This is the *Hippocaſtanum vulgare. Tourn. Inſt. R. H.* 612. Common Horſe Cheſtnut.

There are 2 Varieties of this Tree with variegated Leaves, one has white and the other yellow Blotches; but theſe are very apt to become plain, when they are planted in good Ground and grow vigorouſly, ſo are ſcarce worth propagating.

In the Horſe Cheſtnut there ſeem to be two or three Varieties, differing in the Breadth of their Leaves, and the Colour of their Flowers, one of which hath its Flowers remarkably ſpotted with red and yellow, ſo as to be ſeen at a great Diſtance, and is ſomewhat later in flowering.

This Tree was greatly in Faſhion ſome Years ago, when the Avenues to Houſes, and other ſhady Walks were commonly planted with them, but there are few Sorts of Trees more unfit for this Purpoſe; becauſe their regular pyramidal Growth is obſtructed, when they ſtand near each other, ſo that the Branches will interfere on each Side in the Lines, by which they will be prevented flowering; and as theſe Leaves begin to decay by the End of *July*, they make a very bad Appearance after that Time; and by their Leaves falling, they occaſion a Litter for near 3 Months; upon theſe Accounts it has been leſs eſteemed of late Years.

But although it is not ſo proper for Avenues as many other Trees, yet it ſhould not be wholly excluded from Gardens; where, if properly diſpoſed, it has a very good Effect, eſpecially during its Continuance in flower. They ſhould always be planted ſingly at a Diſtance from each other, or from any other Trees; for when they have full Room to extend their Branches, they will form a natural Parabola or Cone, ſpreading 12 Feet or more on every Side, and this in the Compaſs of a few Years; and when they ſtand thus detached, every Shoot will produce a Spike of Flowers; ſo that the whole Tree will be covered with them, and make a goodly Shew. It flowers in *May*.

This Tree is propagated by planting the Nuts early in Spring, as was directed for the common Cheſtnut, to which I refer the Reader to avoid Repetition.

The Spring following the Plants may be tranſplanted into a Nurſery, in Rows, at 3 Feet Diſtance, and 18 Inches aſunder in the Rows, where they may continue 3 Years, after which Time they may be tranſplanted where they are to remain; the beſt Seaſon for tranſplanting them is in Autumn, or during any of the Winter Months, when other deciduous Trees are removed, for this Tree puts out early in the Spring.

In tranſplanting theſe Trees we ſhould never ſhorten any of their Branches, but only cut off intirely all ſuch as are ill placed, or grow irregular; for they have always a large turgid Bud placed at the Extremity of their Branches, in which is incloſed the future Shoot; which Bud is of great Service in attracting the Nouriſhment, and promoting the Growth of the Tree; and it is often obſerved, where their Branches are ſhortened, that there is produced a glutinous Subſtance, almoſt of the Conſiſtence of Turpentine, which often occaſions the Decay of thoſe particular Branches, and ſometimes of the whole Tree.

Theſe Trees have ſomething very ſingular in their Growth, *i. e.* that their whole Year's Shoot is commonly performed in 3 Weeks Time; after which it does no more than increaſe in Bulk, and become more firm and ſubſtantial, and all the latter Part of the Summer is occupied in forming and ſtrenthening the Buds for the next Year's Shoots. There is a great Regularity in the natural Growth of theſe Trees, their under Branches being always greatly extended; and the ſucceeding ones decreaſing gradually to the Top, form a natural obtuſe Pyramid, which Regularity is by many People greatly diſliked, as appearing too much like thoſe artificial Pyramids, which were formerly ſo much eſteemed and cultivated on ever-green Trees, but are now very juſtly deſpiſed by all curious Perſons; though it muſt be allowed, where theſe Trees are rightly diſpoſed in forming Clumps, *&c.* their conical Figure has a very good Effect, by rendering ſuch Plantations very agreeable to the Eye at ſome Diſtance, eſpecially when the under Parts of the Trees are hid from Sight by other Trees, which ſurround them.

Theſe Trees were originally brought from *Conſtantinople* into *Europe*. The Laurel and the Horſe Cheſtnut were made Denizens of *England* at the ſame Time, which was about the Year 1610; but although they are Natives of ſo warm a Country, yet they are now ſo inured to the Cold, as to defy the ſevereſt of our Winters, and grow to be very large Trees, and produce great Quantities of Nuts annually, from which they may be multiplied at Pleaſure. The Fruit of this Tree is very bitter, and of little Uſe amongſt us at preſent; but in *Turky* they give them to Horſes, in their Provender, that are troubled with Coughs, or are ſhort winded, in both which Diſtempers they are ſuppoſed to be very good. The Deer are very fond of theſe Nuts, ſo that in large Parks there ſhould be many of theſe Trees planted, which will have a good Effect to vary the Objects, and be of great Uſe to the Deer.

HIPPOCRATEA. *Lin. Gen. Pl.* 1098. *Coa. Plum. Nov. Gen.* 8. *Tab.* 35.

The *Characters* are,

It hath a large ſpreading Empalement of 1 *Leaf, cut at the Top into* 5 *Segments; the Flower hath* 1 *oval Petal which is entire, oval, and truncated at the Point. It hath* 6 *ſlender ſhort Stamina, terminated by proſtrate Summits, and* 1 *oval Germen ſituated below the Petal, having no Style, but crowned by a ſhort ſlender Stigma. The Germen becomes an oblong Capſule winged at the Top, incloſing a ſingle Seed.*

I have ſeen but one *Species* of this Genus, *viz.*

HIPPOCRATEA *fructu trigemino ſubrotundo, caule volubili.* *Hippocratea* with a triple roundiſh Fruit, and a twining Stalk. This is the *Coa ſcandens, fructu trigemino ſubrotundo. Plum. Nov. Gen.* 8. Climbing *Coa* with a triple roundiſh Fruit.

The Seeds of this Plant were ſent from *Campeachy* by Mr. *Robert Millar*, and ſeveral of the Plants were raiſed in *England*, which continued two Years in ſeveral Gardens, but not one of them lived to flower; they grew to the Height of 8 or 10 Feet, twining round Stakes, but their Stalks were very ſlender, and decayed at the Bottom, probably from their having too much Wet.

It is a very tender Plant, ſo muſt be conſtantly kept in the Bark Bed in the Stove, and ſhould have but little Wet in Winter.

HIPPOCREPIS. *Lin. Gen. Pl.* 791. *Ferrum equinum. Tourn. Inſt. R. H.* 400. *Tab.* 225. Horſeſhoe vetch; in *French*, *Fer de Chavel.*

The *Characters* are,

The Empalement of the Flower is permanent, of 1 *Leaf, divided into* 5 *Parts, the* 2 *upper being joined. The Flower is of the Butterfly Kind; the Standard hath a narrow Baſe the Length of the Empalement, but is Heart-ſhaped above; the Wings are oval, oblong, and blunt; the Keel is Moon-ſhaped and compreſſed. It hath* 10 *Stamina,* 9 *joined and* 1 *ſeparate, which ſtands erect, terminated by ſingle Summits. It hath an oblong narrow Germen, ſitting on an Awl-ſhaped Style, crowned by a ſingle Stigma. The Germen becomes a long plain compreſſed Pod, cut into many Parts from the under Seam to the upper, each Part forming a roundiſh Sinus with obtuſe* 3 *cornered Joints, connected to the upper Seam, each Joint being ſhaped like a Horſeſhoe, incloſing a ſingle Seed.*

The *Species* are,

1. HIPPOCREPIS *leguminibus ſeſſilibus ſolitariis. Hort. Cliff.* 364. Horſeſhoe Vetch, with ſingle Pods ſitting cloſe to the Stalk. *Ferrum equinum, ſiliquâ ſingulari. C. B. P.* 349. Horſeſhoe Vetch with a ſingle Pod.

2. HIPPOCREPIS *leguminibus pedunculatis confertis, margine exteriore repandis. Prod. Leyd.* 384. Horſeſhoe Vetch, with Pods growing in Cluſters upon Foot Stalks, whoſe outer Border is turned inward. *Ferrum equinum Germanicum, ſiliquis in ſummitate. C. B. P.* 346. *German* Horſeſhoe Vetch, having Pods on the Tops of the Stalks.

3. HIPPOCREPIS *leguminibus pedunculatis confertis, margine altero lobatis. Hort. Cliff.* 364. Horſeſhoe Vetch, with Pods growing in Cluſters upon Foot Stalks, one Border of which has Lobes. *Ferrum equinum ſiliquâ multiplici. C. B. P.* 346. Horſeſhoe Vetch with many Pods.

The 1ſt Sort grows naturally in *Italy* and *Spain*. This is an annual Plant, which ſends from the Root ſeveral trailing Stalks a Foot long, that divide upward into ſmaller Branches, garniſhed with winged Leaves, compoſed of 4 or 5 Pair of ſmall Lobes, terminated by an odd one; theſe are obtuſe, and indented at their Ends; from the Wings of the Stalk, come out ſingle Flowers of the Butterfly Kind, which are yellow, and are ſucceeded by ſingle Pods ſitting cloſe to the Stalks, about 2 Inches long, and a third of an Inch broad, bending inward like a Sickle, and divided into many Joints ſhaped like a Horſeſhoe. This flowers in *June* and *July*, and the Seeds ripen in Autumn, ſoon after which the Plants decay.

The 2d Sort is found growing naturally in ſome Parts of *England*, upon chalky Hills; this is a ſmaller Plant than the former, and hath a perennial Root, ſending out ſlender trailing Stalks about 6 Inches long, garniſhed with narrow winged Leaves; the Flowers grow in Cluſters on the Top of long Foot Stalks; theſe are ſucceeded by Pods which are ſhorter, and twiſted inward in roundiſh Curves, but have Joints ſhaped like thoſe of the former Sort.

The 3d Sort grows naturally in the South of *France*, *Germany*, and *Italy*. This is an annual Plant with trailing Stalks, greatly reſembling the firſt, but the Flowers are produced in Cluſters on the Top of pretty long Foot Stalks; they are ſhaped like thoſe of the other Sorts, and the Pods are jointed in like Manner, but the Joints are fixed to the oppoſite Border. Theſe Plants flower in *June* and *July*, and the Seeds ripen in *Auguſt* and *September*.

Theſe Plants are propagated by Seeds, which ſhould be ſown in Autum, where the Plants are deſigned to remain; and when the Plants come up, they muſt be kept clean from Weeds, and thinned where too cloſe, which is all the Culture they require. The two annual Sorts will decay in the Autumn, after they have perfected their Seeds, but the Roots of the other will continue two or three Years, provided they are not in too good Ground.

HIPPOLAPATHUM. *See* Rumex.

HIPPOMANE. *Lin. Gen. Pl.* 1099. *Mançanilla. Plum. Nov. Gen.* 50. *Tab.* 30. The Manchineel.

The *Characters* are,

It hath male and female Flowers in the ſame Spike, the male Flowers come out in ſmall Cluſters, from a ſhort Cup-ſhaped Empalement; *theſe have no Petals*; *from the Center of each Empalement ariſes a ſingle Style, terminated by* 4 *Summits. The female Flowers have no Petal, but an oval Germen wrapped up in a* 3 *leaved Empalement, ſupporting a ſhort Style, crowned by a concave Stigma. The Germen becomes a roundiſh Fruit with a fleſhy Cover, incloſing a rough hard Shell with ſeveral Cells, each incloſing* 1 *oblong Seed.*

The *Species* are,

1. HIPPOMANE *foliis ovatis ſerratis. Hort. Cliff.* 484. *Hippomane* with oval ſawed Leaves. *Mançanilla pyri facie. Plum. Nov. Gen.* 50. Manchineel with the Appearance of the Pear Tree.

2. HIPPOMANE *foliis ovato-oblongis ſerratis, baſi glanduloſis. Lin. Sp. Plant.* 1191. *Hippomane* with oval oblong Leaves which are ſawed, and have Glands at their Baſe. *Mançanilla lauri foliis oblongis. Plum. Nov. Gen.* 50. Manchineel with oblong Bay Leaves.

3. HIPPOMANE *foliis ſubovatis dentato-ſpinoſis. Lin. Gen. Plant.* 1191. *Hippomane* with oval Leaves, which have prickly Indentures. *Mançanilla aquifolii foliis. Plum. Nov. Gen.* 50. Manchineel with Holly Leaves.

The 1ſt Sort grows naturally in all the Iſlands of the *Weſt-Indies*. This is a very large Tree in its native Soil, almoſt equalling the Oak in Size; the Wood is much eſteemed for making Cabinets, Book Caſes, &c. being very durable, and taking a fine Poliſh; it is alſo ſaid, that the Worms will not eat it: But as the Trees abound with a milky cauſtick Juice, ſo before they are felled, they make Fires round their Trunks to burn out their Juice, otherwiſe thoſe who fell them, would be in Danger of loſing their Sight, by the Juice flying in their Eyes; and where-ever this falls on the Skin, it will raiſe Bliſters; and if it comes upon Linen, it will immediately turn it black, and on being waſhed will come in Holes: It is alſo dangerous to work the Wood after it is ſawn out, for if any of the Saw Duſt happens to get into the Workmens Eyes, it cauſes Inflammations, and the Loſs of Sight for ſome Time; to prevent which, they generally cover their Faces with fine Lawn, during the Time they are working it.

This Tree hath a ſmooth browniſh Bark, the Trunk divides upward into many Branches, garniſhed with oblong Leaves, about 3 Inches long, and 1 Inch and a Half broad, ending in acute Points, they are ſlightly ſawed on their Edges, and are of a lucid green, ſtanding on ſhort Foot Stalks. The Flowers come out in ſhort Spikes at the End of the Branches, being of both Sexes in the ſame Spike, but having no Petals, they make but little Appearance; theſe are ſucceeded by Fruit, about the Size, and of the ſame Shape as the Golden Pippin, turning of a yellow Colour when ripe, which has often tempted Strangers to eat of them to their Coſt, for they inflame the Mouth and Throat to a great Degree, cauſing violent Pains in the Throat and Stomach, which is dangerous, unleſs Remedies are timely applied.

The Inhabitants of *America* believe it is dangerous to ſit or lie under theſe Trees, and affirm, that the Rain, or Dew, which falls from the Leaves, will raiſe Bliſters, but it is very certain, that unleſs the Leaves are broken, and the Juice of them mix with the Rain, it will do no Injury.

The 2d Sort grows naturally at *Carthagena*, in *New Spain*, and the 3d at *Campeachy*, from which Places the late Dr. *Houſtoun* ſent me their Seeds. The 2d Sort grows to as large a Size as the 1ſt. The Leaves are much longer than thoſe of the 1ſt, and have 2 ſmall Glandules growing at their Baſe, they are ſawed on their Edges, and are of a lucid green.

The 3d Sort is of humbler Growth, ſeldom riſing more than 20 Feet high; the Leaves of this greatly reſemble thoſe of the common Holly, and are ſet with ſharp Prickles at the End of each Indenture, they are of a lucid green, and continue all the Year.

Theſe Plants are preſerved in ſome of the curious Gardens in *Europe*, where they can never be expected to riſe to any great Height, for they are too tender to live in theſe Northern Countries, but in Stoves; they riſe eaſily from Seeds, provided they are good. The Seeds muſt be ſown on a good hot Bed, and when the Plants come up, they ſhould be each planted in a ſmall ſeparate Pot filled with light ſandy Earth, and plunged into a good Bed of Tanners Bark, treating them as other tender Plants, but they muſt not have much Wet, for theſe Plants abound with an acrid milky Juice, and it is certain that moſt Plants which do, are ſoon killed by much Moiſture; theſe Plants muſt be removed into the Stove, and plunged into the Tan Bed in Autumn, where they ſhould conſtantly remain, giving them very little Water in Winter, and in Summer when the Weather is warm, they ſhould have a good Share of Air admitted to them, and once or twice a Week refreſhed with Water; by this Management I have raiſed many of theſe Plants to the Height of 5 or 6 Feet, which have by their ſhining green Leaves, made a pretty Variety during the Winter Seaſon in the Stove.

HIPPOPHAE. *Lin. Gen. Pl.* 980. *Rhamnoides. Tourn. Cor.* 52. *Tab.* 481. Baſtard *Rhamnus*, or Sea Buckthorn.

The *Characters* are,

It is male and female in different Plants, the male Flowers have an Empalement of 1 *Leaf, cut into* 2 *Parts, which cloſe at their Points, they have no Petals, but have* 4 *ſhort Stamina, terminated by oblong angular Summits, which are equal to the Empalement. The female Flowers have no Petals, but a* 1 *leaved Empalement, which is oval, oblong, tubulous, and bifid at the Brim; theſe have no Stamina, but in the Center is ſituated a ſmall roundiſh Germen, with a ſhort Style, crowned by an oblong thick Stigma, twice the Length of the Empalement. The Germen turns to a globular Berry with* 1 *Cell, incloſing* 1 *roundiſh Seed.*

The *Species* are,

1. HIPPOPHAE *foliis lanceolatis. Lin. Sp. Pl.* 1023. *Hippophae* with Spear-ſhaped Leaves. *Rhamnoides ſalicis folio. Tourn. Cor.* 53. Sea Buckthorn with a Willow Leaf.

2. HIPPOPHAE *foliis ovatis. Lin. Sp. Pl.* 1024. *Hippophae* with oval Leaves, called *Canada* Sea Buckthorn.

The 1ſt Sort grows naturally on the Sea Banks in *Lincolnſhire*, and alſo on the Sand Banks between *Sandwich* and *Deal*, in *Kent*; there are two Varieties of this, one with yellow, and the other red, with red Fruit, but it is the firſt only which I have obſerved growing naturall in *England*, the other I ſaw growing on the Sand Banks in *Holland*.

Theſe riſe with ſhrubby Stalks, 8 or 10 Feet high, ſending out many irregular Branches, which have a brown Bark ſilvered over, garniſhed with very narrow Spear-ſhaped Leaves, about 2 Inches long, and a Quarter of an Inch broad in the Middle, leſſening gradually to both Ends, of a dark green on their upper Side, but hoary on their under, having a prominent Mid-rib; the two Borders of the Leaves are reflexed like the Roſemary; theſe are placed alternate on every Side the Branches, ſitting very cloſe. The Flowers come out from the Side of the younger Branches, to which they ſit very cloſe. The male Flowers growing in ſmall Cluſters, but the female come out ſingly; theſe make but little Appearance. They appear in *July*, and the Berries on the female Plants are ripe in Autumn.

This Sort is eaſily propagated by Suckers from the Root, for the Roots ſpread wide, and ſend up a great Number of Shoots, ſo as to form a Thicket; if theſe are taken off in Autumn, and tranſplanted into a Nurſery, they will be fit to tranſplant after one Year's Growth, to the Places where they are to remain; as there is little Beauty in this Plant, ſo 1 or 2 of them may be allowed a Place in a Plantation of Shrubs for Variety.

The 2d Sort grows naturally in *North America*; this hath much the Appearance of the former Sort, but the Leaves differ in their Shape, theſe being much ſhorter and broader, and not ſo white on their under Side. This hath not as yet flowered in this Country, but the Plants ſeem equally hardy with the former, and may be eaſily propagated by Suckers or Layers.

HIPPOSELINUM. *See* Smyrnium.

HIRUNDINARIA. *See* Aſclepias.

HOLCUS. *Lin. Gen. Pl.* 1015. *Milium. Tourn. Inſt. R. H.* 514. *Tab.* 298. *Sorgum. Mich. Indian* Millet, or Corn.

The *Characters* are,

It hath male and hermaphrodite Flowers on the ſame Plant. The male Flowers are ſmall, and have a bivalve Chaff; theſe Valves are oval, Spear-ſhaped, and twiſted, ending with an acute Beard; they have neither Petals, or any proper Empalement, but 3 *hairy Stamina, terminated by oblong Summits. The hermaphrodite Flowers are ſingle, in a ſtiff bivalve Chaff; the inner of theſe is ſlender, hairy, and leſs than the Empalement; the outer Valve terminates in a rigid Beard, and is larger than the Empalement; they have* 3 *hairy Stamina, terminated by oblong Summits, with a roundiſh Germen, ſupporting* 2 *hairy Styles, crowned with plumoſe Summits. The Germen becomes an oval ſingle Seed wrapped up in the Chaff.*

The *Species* are,

1. HOLCUS *glumis villoſis, ſeminibus ariſtatis. Hort. Upſ.* 301. *Holcus* with hairy Chaff, and bearded Seeds. *Milium arundinaceum, ſubrotundo ſemine, ſorgo nominatum. C. B. P.* 26. Reed-like Millet with a roundiſh Seed called *Sorgum*.

2. HOLCUS *glumis glabris, ſeminibus muticis. Lin. Sp. Pl.* 1047. *Holcus* with ſmooth Huſks, and Seeds without Awns. *Milium Indicum, arundinaceo caule, granis flaveſcentibus. H. L.* 425. *Indian* Millet with a Reedy Stalk, and yellowiſh Grains.

There are ſeveral other of the graſſy Tribe which belong to this Genus, but as they are not cultivated for Uſe, I ſhall not enumerate them here.

The 2 Sorts here mentioned, grow naturally in *India*, where their Grain is often uſed to feed Poultry, and the Seeds are frequently ſent to *Europe* for the ſame Purpoſe, but the Summers are ſeldom warm enough to ripen the Seeds in the open Air. The Stalks of theſe Plants riſe 5 or 6 Feet high, with ſtrong reedy Stalks, like thoſe of the Maiz, or *Turkey* Wheat. The Leaves are long and broad, having a deep Furrow through the Center of the Leaf, where the Mid-rib is depreſſed on the upper Surface, and is very prominent below. The Leaves are 2 Feet and a Half long, and 3 Inches broad in the Middle, embracing the Stalks with their Baſe. The Flowers come out in large Panicles at the Top of the Stalks, reſembling, at firſt Appearance, the male Spikes of the *Turkey* Wheat; theſe are ſucceeded by large roundiſh Seeds, wrapped round with the Chaff.

Theſe Plants are propagated in a few Gardens for Variety, but as they are late in ripening their Grain here, they are not worth cultivating for Uſe. The Seeds ſhould be ſown on a warm Border the Beginning of

April, and when the Plants come up, they ſhould be thinned to the Diſtance of a Foot aſunder in the Rows, and the Rows ſhould be 3 Feet Diſtance; the Culture after this, is to keep the Ground clean from Weeds, and draw the Earth up with a Hoe to the Stems of the Plants; if the Seaſon proves warm, their Panicles will appear in *July*, and the Grain will ripen in *September*; but in bad Seaſons their Grain will not ripen here.

HOLLOW ROOT. *See* Fumaria.

HOLLY. *See* Ilex.

HOLLYHOCKS. *See* Alcea.

HOMOGENEAL or HOMOGENEOUS Plants are ſuch Plants as are of the ſame Kind, or Nature, with others.

HONEYSUCKLE. *See* Periclymenum.

HOPS. *See* Lupulus.

HORDEUM. *Lin. Gen. Pl.* 94. *Tourn. Inſt. R. H.* 513. *Tab.* 293. Barley; in *French*, *Orge*.

The *Characters* are,

It hath a partial Involucrum of 6 *narrow pointed Leaves, which contains* 3 *Flowers. The Petal of the Flower opens with* 2 *Valves, the under Valve is angular, ſwelling, oval, and pointed, being longer than the Empalement, ending in a long Beard, the inner is ſmall and Spear-ſhaped. The Flower hath* 3 *hairy Stamina ſhorter than the Petal, terminated by oblong Summits. It hath an oval turned Germen, ſupporting* 2 *hairy reflexed Styles, crowned by the like Stigmas. The Germen becomes an oblong bellied Seed, pointed at both Ends, having a longitudinal Furrow, ſurrounded by the Petal of the Flower, which does not fall off.*

The *Species* are,

1. Hordeum *floſculis omnibus hermaphroditis ariſtatis ordinibus duobus erectioribus. Lin. Sp. Pl.* 84. Barley with all the Flowers hermaphrodite, and 2 Orders of Beards, which are erect. *Hordeum polyſticon vernum. C. B. P.* 22. Spring Barley with many Rows of Grain.

2. Hordeum *floſculis lateralibus maſculis muticis, feminibus angularibus imbricatis. Hort. Upſal.* 23. Barley with male Flowers on the Side, without Awns, and angular Seeds placed over each other. *Hordeum diſtichon. C. B. P.* 22. Common long eared Barley.

3. Hordeum *floſculis lateralibus maſculis muticis, feminibus angularibus patentibus corticatis. Hort. Upſal.* 23. Barley with male Flowers on the Side, without Awns, and angular ſpreading Seeds with Huſks. *Hordeum diſtichum, ſpicâ breviore & latiore, granis confertis. Raii. Syn.* 246. Barley with ſhorter and broader Spikes, commonly called Sprat, or Battledore Barley.

4. Hordeum *floſculis omnibus hermaphroditis ariſtatis, ſeminibus ſexfariàm æqualiter poſitis. Hort. Upſal.* 23. Barley with all the Flowers hermaphrodite and bearded, and 6 Rows of Seeds equally ranged. *Hordeum hexaſticum pulchrum. J. B.* 2. 429. Winter, or Square Barley, Bear Barley, or Big.

The 1ſt Sort is the common Spring Barley, cultivated in *England*, of this the Farmers make two Sorts, *viz.* the common and Rath-ripe Barley, which are the ſame; for the Rath-ripe has only been an Alteration occaſioned by being long cultivated upon warm gravelly Lands. The Seeds of this, when ſown in Cold, or ſtrong Land, will, the firſt Year, ripen near a Fortnight earlier than the Seeds taken from ſtrong Land, therefore the Farmers in the Vales, generally purchaſe their Seed Barley from the warm Land, for if ſaved in the Vales 2 or 3 Years, it will become full as late in ripening as the common Barley of their own Product, and the Farmers on the warm Land are alſo obliged to procure their Seed Barley from the ſtrong Land, otherwiſe their Grain would degenerate in Bulk and Fullneſs, which by thus changing is prevented. This Sort of Barley is eaſily diſtinguiſhed by the two Orders of Beards, or Awns, which ſtand erect; the Chaff is alſo thinner than that of the two laſt Species, ſo is eſteemed better for malting.

The 2d Sort is the long eared Barley, cultivated in many Parts of *England*, and is an exceeding good Sort, but ſome Farmers object to it, becauſe they ſay the Ears being long and heavy, it is more apt to lodge; this hath the Grains regularly ranged in a double Row, lying over each other like Tiles on a Houſe, or the Scales of Fiſhes. The Huſk, or Chaff of this Barley is alſo very thin, ſo is much eſteemed for malting.

The 3d Sort is uſually called Sprat Barley; this hath ſhorter and broader Ears than either of the other Sorts; the Awns, or Beards, are longer, and the Grains are placed cloſer together, and the Awns being long, the Birds cannot ſo eaſily get out the Grains; this ſeldom grows ſo tall as the other Species, the Straw is ſhorter and coarſer, ſo not very good Fodder for Cattle.

The 4th Sort is rarely cultivated in the Southern Parts of *England*, but in the Northern Counties, and in *Scotland* is generally ſown, being much hardier than the other Species, ſo will bear the Cold; this hath its Grains diſpoſed in 6 Rows; the Grain is large and plump, but is not ſo good for malting, which is the Reaſon it is not cultivated in the Southern Parts of *England*, where the other Sorts which are much better for that Purpoſe thrive well.

All theſe Sorts of Barley are ſown in the Spring of the Year, in a dry Time; in ſome very dry light Land, the Barley is ſown early in *March*, but, in ſtrong clayey Soils, it is not ſown till *April*, and ſometimes not until the Beginning of *May*, but when it is ſown ſo late, if the Seaſon doth not prove very favourable, it is very late in Autumn before it is fit to mow, unleſs it be the Rath-ripe Sort, which is often ripe in 9 Weeks from the Time of ſowing.

Some People ſow Barley on Land where Wheat grew the former Year, but when this is practiſed, the Ground ſhould be ploughed the Beginning of *October* in a dry Time, laying it in ſmall Ridges, that the Froſt may mellow it the better, and this will improve the Land greatly; and if this can be ploughed again in *January*, or the Beginning of *Februvry*, it will break and prepare the Ground better; then in *March* the Ground is ploughed again, and laid even where it is not very wet; but in ſtrong wet Lands the Ground ſhould be laid round, and the Furrows made deep to receive the Wet. When this is finiſhed, the common Method is to ſow the Barley Seed with a broad Caſt at two Sowings; the firſt being harrowed in once, the ſecond is harrowed until the Seed is buried; the common Allowance of Seed is 4 Buſhels to an Acre.

This is the Quantity of Grain uſually ſown by the Farmers, but if they could be prevailed on to alter this Practice, they would ſoon find their Account in it, for if leſs than half that Quantity is ſown, there will be a much greater Produce, and the Corn will be leſs liable to lodge, as I have many Years experienced; for when Corn or any other Vegetable ſtands very cloſe, the Stalks are drawn up weak, ſo are incapable to reſiſt the Force of Winds, or bear up under heavy Rains, but when they are at a proper Diſtance, their Stalks will be more than twice the Size of the other, ſo are ſeldom laid. I have frequently obſerved in Fields where there has been a Foot Path through their Middle, that the Corn which has ſtood thin on each Side the Path hath ſtood upright, when all the reſt on both Sides has been laid flat on the Ground; and whoever will obſerve theſe Roots of Corn near the Paths, will find them tiller out (*i. e.* have a greater Number of Stalks) to more than 4 Times the Quantity of the other Parts of the Field. I have ſeen Experiments made by ſowing Barley in Rows acroſs divers Parts of the ſame Field, and the Grains ſowed thin in the Rows, ſo that the Roots were 3 or 4 Inches aſunder in the Rows, and the Rows a Foot Diſtance; the intermediate Spaces of the ſame Field were at the ſame Time ſown broad Caſt in the uſual Way; the Succeſs was this, the Roots which ſtood thin in the Rows tillered out from 10 or 12, to upward of 30 Stalks on each Root, the Stalks were ſtronger, the Ears longer, and the Grains larger than any of thoſe ſown in the common Way; and when thoſe Parts of the Field where the Corn ſown in the uſual Way has been lodged, theſe Parts ſown thin have ſupported their upright Poſition againſt Wind and Rain, though the Rows have been made not only Lengthways, but croſs the Lands, in ſeveral Poſitions, ſo that there could be no Alteration in Regard to the Goodneſs of the Land, or the Situation of the Corn; therefore where ſuch Experiments have been frequently made, and always attended with equal Succeſs, there can be no Room to doubt which of the two Methods is more eligible, ſince if the Crops were only ſuppoſed to be equal in both, the ſaving more than half the Corn ſown, is a very great Advantage, and deſerves a national Conſideration, as ſuch a Saving, in ſcarce Times, might be a very great Benefit to the Publick.

I know the Farmers in general are very apt to complain if their Corn does not come up ſo thick as to cover the Ground green in a ſhort Time, like Graſs Fields, but I have often obſerved, that from the Badneſs of the Seaſon it has come up thin, or by Accident has been in Part killed, their Corn has been ſtronger, the Ears longer, and the Grain plumper, ſo that the Produce has been much greater than in thoſe Years when it has come up thick; for the natural Growth of Corn is to ſend out many Stalks from a Root, and not riſe ſo much in Height, therefore it is entirely owing to the Roots ſtanding too near each other, when the Stalks are drawn up tall and weak. I have had 86 Stalks upon one Root of Barley, which were ſtrong, produced longer Ears, and the Grain was better filled than any which I ever ſaw grow in the common Method of Huſbandry, and the Land upon which this grew was not very rich; but I have frequently obſerved on the Sides of hot Beds in the Kitchen Gardens, where Barley Straw has been uſed for covering the Beds, that ſome of the Grains left in the Ears has dropped out and grown, the Roots have produced from 30 to 60 Stalks each, and thoſe have been three or four Times larger than the Stalks ever arrive at in the common Way: But to this I know it will be objected, that although upon rich Land in a Garden, theſe Roots of Corn may probably have ſo many Stalks, yet in poor Land they will not have ſuch Produce, therefore unleſs there is a greater Quantity of Seeds ſown, their Crop will not be worth ſtanding, which is one of the greateſt Fallacies that can be imagined; for to ſuppoſe that poor Land can nouriſh more than twice the Number of Roots in the ſame Space as rich Land, is ſuch an Abſurdity, as one could hardly ſuppoſe any Perſon of common Underſtanding guilty of, and yet ſo it is, for the general Practice is to allow a greater Quantity of Seed to poor Land, than for richer Ground, not conſidering that where the Roots ſtand ſo cloſe, they will deprive each other of the Nouriſhment, ſo ſtarve themſelves, which is always the Caſe where the Roots ſtand cloſe, which any Perſon may at firſt Sight obſerve in any Part of the Fields where the Corn happens to ſcatter when they are ſowing it; or in Places, where, by harrowing, the Seed is drawn in Heaps, thoſe Patches will ſtarve, and never grow to a third Part of the Size as the other Parts of the ſame Field, and yet common as this is, it is little noticed by Farmers, otherwiſe they ſurely would not continue their old Cuſtom of ſowing. I have made many Experiments for ſeveral Years in the pooreſt Land, and have always found that all Crops ſown or planted at a greater Diſtance than uſual have ſucceeded beſt; and I am convinced if the Farmers could be prevailed on to quit their Prejudices, and make Trial of this Method of ſowing their Corn thin, they would ſoon ſee the Advantage of this Huſbandry.

The Noblemen and Gentlemen in *France* are very buſy in ſetting Examples of this Huſbandry in moſt of their Provinces, being convinced by many Trials of its great Utility, and it were to be wiſhed the ſame was done in *England*.

When the Barley is ſown, the Ground ſhould be rolled after the firſt Shower of Rain, to break the Clods and lay the Earth ſmooth; which will render it better to mow, and alſo cauſe the Earth to lie cloſer to the Roots of the Corn, which will be of great Service to it in dry Weather.

Where Barley is ſown upon new broken up Land, the uſual Method is, to plough up the Land in *March*, and let it lie fallow until *June*, at which Time it is ploughed again, and ſown with Turneps, which are eaten by Sheep in Winter, by whoſe Dung the Land is greatly improved, and then in *March* following the Ground is ploughed again, and ſown with Barley as before.

There are many People who ſow Clover with their Barley, and ſome have ſown the Lucern with Barley; but neither of theſe Methods is to be commended, for where there is a good Crop of Barley, the Clover or Lucern muſt be ſo weak as not to pay for ſtanding, ſo that the better way is to ſow the Barley alone without any other Crop among it, and then the Land will be at Liberty for any other Crop, when the Barley is taken off the Ground; but this practice of ſowing Clover, Rye Graſs, and other Graſs Seeds, with Corn, has been ſo long and univerſally eſtabliſhed among Farmers, that there is little Hope of prevailing with thoſe People to alter a Cuſtom which has been handed down to them from their Predeceſſors, although there ſhould be many Examples produced, to ſhew the Abſurdity of it.

When the Barley has been up 3 Weeks or a Month, it will be a very good Method to roll it over with a weighty Roller, which will preſs the Earth cloſe to the Roots of the Corn, and thereby prevent the Sun and Air from penetrating the Ground, which will be of ſingular Service in dry Seaſons; and this rolling of it before it ſtalks, will cauſe it to till out into a greater Number of Stalks; ſo that if the Plants ſhould be thin, this will cauſe them to ſpread ſo as to fill the Ground, and likewiſe ſtrengthen the Stalks.

The Time for cutting Barley is, when the red Colour of the Ears is off, and the Straw turns yellow, and the Ears begin to hang down: In the North of *England* they always reap their Barley, and make it up in Sheaves, as is practiſed here for Wheat, by which Method they do not loſe near ſo much Corn, and it is alſo more handy to ſtack; but this Method cannot ſo well be practiſed where there are many Weeds amongſt the Corn, which is too frequently the Caſe in the rich Lands near *London*, eſpecially in moiſt Seaſons; therefore when this is the Caſe, the Barley muſt lie on the Sward till all the Weeds are dead; but as it is apt to ſprout in wet Weather, it muſt be ſhook up, and turned every fair Day after Rain to prevent it. When it is carried, it ſhould be thoroughly dry, for if ſtacked wet, it will turn muſty; or if too green, it is ſubject to burn in the Mow. The common Produce of Barley, is two and a Half, or three Quarters on an Acre, but I have ſometimes known 6 or 7 Quarters on an Acre.

HORIZONTAL SHELTERS have, by ſome Perſons, been greatly recommended to preſerve Fruit Trees from Blights; but with how little Reaſon, or upon what ſlight Experiments, every one who has ever made Uſe of them, will eaſily judge; eſpecially thoſe which are contrived by placing Tiles in the Wall at certain Diſtances, nothing being more obvious, than that Vegetables, when prevented from receiving the Advantage of Dews, Rains, &c. thoſe kindly Benefits of Heaven, grow weak, languid, and at laſt entirely decay: And ſince, from vaſt Numbers of Experiments which have been lately made, we find the Trees imbibe great Quantities of Nouriſhment through the Pores of their Leaves and Branches, whereby they are rendered vigorous and healthy, even in ſuch Seaſons, and upon ſuch Soils, where one would think it impoſſible they ſhould receive much Nouriſhment from the Earth; to deprive them of this Advantage, is no leſs than deſtroying them; though perhaps, if the Trees are vigorous, it may not be effected ſuddenly; but there will be very viſible Signs of Decay on them daily, and a few Years will put a Period to their Lives, as I have more than once obſerved, where ſuch Walls were built.

The only Sort of theſe Shelters which I have ever obſerved uſeful for Fruit Trees, was made with 2 Leaves of ſlit Deal, joined over each other, and painted; this being fixed upon the Top of the Wall with Pullies, to draw up and down at Pleaſure, formed a Sort of Penthouſe; which being let down in great Rains, or cold Nights, during the Time that the Trees were in flower, or the Fruit was ſetting, proved ſerviceahle; but then theſe Shelters were removed away ſoon after the Fruit was ſet, ſo that the Trees might enjoy all the Advantages of Rain, Dew, &c. in the Summer, which is abſolutely neceſſary, if we would have healthy Trees or good Fruit.

HORMINUM. *Tourn. Inſt. R. H.* 178. *Tab.* 82. *Salvia. Lin. Gen. Pl.* 36. Clary; in *French*, *Ormin.*

The *Characters* are,

The Empalement of the Flower is permanent, of 1 *Leaf, tubulous, and channelled, having* 2 *Lips; the upper is broad, ending in* 3 *acute Points; the under is ſhorter, ending in* 2 *Points. The Flower has* 1 *Petal, divided into* 2 *Lips; the upper is concave, compreſſed on the* 2 *Sides, and incurved with a ſlight Indenture at the Point, the lower is broader and more indented. It hath* 2 *ſhort Stamina ſituated in the Tube of the Flower, terminated by ſhort proſtrate Summits. In the Bottom of the Tube are* 4 *roundiſh Germina ſupporting a ſingle Style crowned by a bifid Stigma, ſituated in the upper Lip of the Petal. The Germina become* 4 *Seeds, lodged in the Empalement.*

The *Species* are,

1. HORMINUM *foliis ſinuatis obtuſis crenatis, calycibus acutis.* Clary witho btuſe ſinuated Leaves crenated, and the Empalement ending in acute Points. *Horminum ſylveſtre lavendulæ flore. C. B. P.* 239. Wild Clary with a Lavender Flower.

2. HORMINUM *foliis pinnato-ſinuatis rugoſis, calycibus corollâ longioribus.* Clary with Wing-ſhaped, ſinuated Leaves which are rough, and the Empalements longer than the Petal of the Flower. *Horminum folio querno. Volk.* Oak-leaved Clary.

3. HORMINUM *foliis cordatis crenato-dentatis, verticillis ſubnudis, ſtylo corollarum labio inferiore incumbente.* Clary with Heart-ſhaped, crenated, indented Leaves, naked Whorls, and the Style lying upon the under Lip of the Petal. *Horminum ſylveſtre latifolium verticillatum. C. B. P.* 283. Broad Leaved wild Clary, with Flowers growing in Whorls.

4. HORMINUM *foliis radicalibus pinnato-inciſis, caulinis cordatis crenatis, ſummis ſemiamplexicaulibus.* Clary with lower Leaves cut and winged, thoſe on the Stalks Heart-ſhaped and crenated, and thoſe on the Top half embracing the Stalks. *Horminum napi folio. Mor. Hort. R. Blæſ.* Clary with a Navew Leaf.

5. HORMINUM *foliis obtuſis crenatis, bracteis ſummis ſterillibus majoribus coloratis.* Clary with obtuſe crenated Leaves, and the Bracteæ on the Top of the Stalks large, coloured, and barren. *Horminum comâ purpuro-violaceâ. J. B.* 3. 309. Clary with a purple-violet Top.

The 1ſt Sort grows naturally on ſandy and gravelly Grounds, in many Parts of *England.* This is a perennial Plant, the lower Leaves grow on pretty long Foot Stalks, and are near 4 Inches long and 2 broad; they are ſinuated on their Borders, and bluntly crenated, their Surface is rugged and wrinkled; the Stalks are a Foot long, ſquare, and inclining toward the Ground; the Leaves upon theſe are ſmaller, and crenated on their Edges; the Flowers grow in a whorled Spike at the Top of the Stalk, generally with 2 ſhorter Spikes, 1 on each Side; the Flowers are ſmall and blue; theſe are ſcarce ſo long as their Empalements; they have but 1 Petal, divided into 2 Lips, the upper being a little longer than the under, and almoſt ſhuts over it; there are but 2 Stamina in each Flower, and 4 Germina at the Bottom, ſupporting a ſingle Style; the Germina afterward become ſo many naked Seeds, ſitting in the Empalement. It flowers in *June* and *July*, and the Seeds ripen in *Auguſt* and *September*. This Sort propagates itſelf in Plenty, if the Seeds are permitted to ſcatter, and requires no Culture but to keep the Plants clean from Weeds.

This is ſometimes called *Oculus Chriſti*, from the ſuppoſed Virtues of its Seeds in clearing the Sight, which it does by its viſcous Covering; for when any Thing happens to fall into the Eye, if one of the Seeds is put in at one Corner, and the Eye-lid kept cloſe over it, moving the Seed gently along the Eye, whatever happens to be there will ſtick to the Seed, and ſo may be brought out. The Virtues of this are ſuppoſed to be the ſame as the Garden Clary, but not quite ſo powerful.

The 2d Sort grows naturally in the South of *France* and *Italy*, the lower Leaves are upward of 4 Inches long, and not more than 1 broad, regularly ſinuated on both Sides, in Form of a winged Leaf; the Stalks riſe about the ſame Height with the former, but all the Leaves on the Stalks are ſinuated in the ſame Manner as the lower; the Flowers are ſmaller than thoſe of the firſt, but grow in whorled Spikes like them. This is a perennial Plant, is very hardy, and will propagate in Plenty by its ſcattered Seeds. It is ſeldom kept in Gardens, but for Variety.

The 3d Sort is a perennial Plant, which grows naturally in *Auſtria* and *Bohemia*. This ſends out from the Root a great Number of Heart-ſhaped Leaves, ſawed on their Edges and deeply veined, ſtanding on pretty long Foot Stalks which are hairy; the Stalks riſe from between theſe, are ſquare, and grow 2 Feet and a Half high, garniſhed with 2 Heart-ſhaped Leaves at each Joint, whoſe Baſe ſits cloſe to the Stalks, half embracing them; the Stalks at the two or three upper Joints, put out on each Side a long Foot Stalk; theſe, and alſo the principal Stalk, are garniſhed with Whorls of ſmall blue Flowers, not much unlike thoſe of the common Sort, but larger; the Spikes are more than a Foot long, and toward the Top the Whorls are nearer together. It flowers in *June*, and the Seeds ripen in *Auguſt*.

The 4th Sort grows naturally in the South of *France*, and in *Italy*. This is alſo a perennial Plant, which has ſome Reſemblance of the 3d, but the lower Leaves are cut at their Baſe to the Mid-rib, into 1 or 2 Pair of Ears or Lobes, which are but ſmall, and are often at a Diſtance from each other; the Leaves are not ſawed, but bluntly indented; the Stalks are ſlenderer, and do not grow ſo tall as thoſe of the third, nor are the Spikes of Flowers ſo long. This flowers and Seeds at the ſame Time with the third.

Both Sorts may be eaſily propagated by Seeds, which, if ſown in the Spring on an open Spot of Ground, the Plants will come up, and require no other Care but to keep them clean from Weeds, and allow them Room to grow; for they ſhould not be nearer than 2 Feet apart, for they grow very large, and will laſt ſeveral Years.

The 5th Sort is an annual Plant, which grows naturally in *Spain*; of this there are 3 Varieties which are conſtant, one with purple Tops, another with red Tops, and a third with green Tops. As they differ in nothing but the Colour of their Bracteæ on the Top of the Stalks, I have not put them down as different Species, though from more than 30 Years cultivating them, I have not known them alter.

Theſe Plants have obtuſe crenated Leaves, ſhaped like thoſe of the common red Sage; the Stalks are ſquare and grow erect, about a Foot and a Half high; their lower Parts are garniſhed at each Joint, with 2 oppoſite Leaves of the ſame Shape, but gradually diminiſhing in Size toward the Top: The Stalks are garniſhed upward with Whorls of ſmall Flowers, and are terminated by Cluſters of ſmall Leaves, which in one are red, in another blue, and a third green, which make a pretty Appearance, and are preſerved in Gardens for Ornament. They flower in *June* and *July*, and their Seeds ripen in the Autumn.

The Seeds of theſe are ſown in the Spring, in the Places where they are deſigned to remain, and require no other Care but to keep them clean from Weeds, and thin them where too cloſe.

Garden Clary. *See* Sclarea.

HORNBEAM. *See* Carpinus.

HORSE CHESTNUT. *See* Hippocaſtanum.

HORSE DUNG is of great Uſe to make hot Beds for raiſing all Sorts of early Garden Crops, as Cucumbers, Melons, Aſparagus, Sallading, *&c.* for which Purpoſe no other Sort of Dung will do ſo well, this fermenting the ſtrongeſt; and, if mixed with long Litter, and Sea Coal Aſhes in due Proportion, will continue its heat much longer than any other Sort of Dung whatſoever; and afterwards when rotted, becomes an excellent Manure for moſt Sorts of Lands, more eſpecially for ſuch as are of a cold Nature; and for ſtiff clayey Lands, when mixed with Sea Coal Aſhes, and the Cleanſings of *London* Streets, it will cauſe the Parts to ſeparate much ſooner than any other Compoſt will do; ſo that where it can be obtained in Plenty, I would always recommend the Uſe of it for ſuch Lands.

HOSE IN HOSE, a Term uſed in Gardening, to ſignify one Tube or Petal within another, as in the Polyanthos, where there are in ſome Varieties 2 Petals.

HOT BEDS are of general Uſe in theſe Northern Parts of *Europe*, without which we could not enjoy ſo many of the Products of warmer Climes as we do now; nor could we have the Tables furniſhed with the ſeveral Products of the Garden, during the Winter and Spring Months, as they are at preſent in moſt Parts of *England*, better than in any other Country in *Europe*, for although we cannot boaſt of the Clemency of our Climate, yet *England* is better furniſhed with all Sorts of eſculent Plants for the Table, much earlier in the Seaſon, and in greater Quantities, than any of our Neighbours, which is owing to our Skill in hot Beds.

The ordinary hot Beds uſed in Kitchen Gardens, are made with new Horſe Dung, in the following Manner:

1ſt, There is a Quantity of new Horſe Dung from the Stable (in which there ſhould be Part of the Litter

ter or Straw which is commonly uſed in the Stable, but not in too great Proportion to the Dung,) the Quantity muſt be according to the the Length of the Bed intended: which, if early in the Year, ſhould not be leſs than one good Load for each Light; this Dung ſhould be thrown up in a Heap, mixing therewith a few Sea Coal Aſhes, which will be of Service to continue the Heat of the Dung; it ſhould remain 6 or 7 Days in this Heap, then it ſhould be turned over, and the Parts well mixed together, and caſt into a Heap again, where it may continue 5 or 6 Days longer, by which Time it will have acquired a due Heat; then in ſome well ſheltered Part of the Garden, you muſt dig out a Trench in Length and Width, proportioned to the Frames you intend it for; and if the Ground be dry, about a Foot or a Foot and a Half deep; but if wet, not above 6 Inches; then wheel the Dung into the Opening, obſerving to ſtir every Part of it with a Fork, and lay it exactly even and ſmooth through every Part of the Bed; alſo lay the Bottom Part of the Heap (which is commonly free from Litter) upon the Surface of the Bed; this will prevent the Steam from riſing ſo plentifully as it would otherwiſe do. To prevent this, and the Heat from riſing ſo violently as to burn the Roots of whatever Plants are put into the Ground, it will be a very good Way to ſpread a Layer of Neats Dung all over the Surface of the Horſe Dung, which will prevent the Mold from burning: If the Bed is intended for Cucumbers or Melons, the Earth ſhould not be laid all over the Bed at firſt, only a Hill of Earth ſhould be firſt laid in the Middle of each Light on which the Plants ſhould be planted, and the remaining Space ſhould be filled up from Time to Time as the Roots of the Plants ſpread, but this is fully explained under thoſe two Articles. But if the hot Bed is intended for other Plants, then after the Bed is well prepared, it ſhould be left two or three Days for the Steam to paſs, before the Earth is laid upon the Dung.

In making theſe hot Beds, it muſt be carefully obſerved to ſettle the Dung cloſe with a Fork; and if it be pretty full of long Litter, it ſhould be equally trod down cloſe in every Part, otherwiſe it will be ſubject to heat too violently, and conſequently the Heat will be much ſooner ſpent, which is one of the greateſt Dangers theſe Sort of Beds may be liable to. During the firſt Week or ten Days after the Bed is made, you ſhould cover the Glaſſes but ſlightly in the Night, and in the Day Time carefully raiſe them to let out the Steam, which is ſubject to riſe very copiouſly while the Dung is freſh; but as the Heat abates, the Covering ſhould be increaſed; otherwiſe the Plants in the Beds will be ſtinted in their Growth, if not entirely deſtroyed. In order to remedy this Evil, if the Bed be very cold, you muſt put a pretty good Quantity of new hot Dung round the Sides of it, which will add a freſh Heat thereto, and cauſe it to continue a conſiderable Time after; and as the Spring advances, the Sun will ſupply the Loſs of the Dung's Heat; but then it will be adviſable to lay ſome Mowings of Graſs round the Sides of the Bed, eſpecially if the Nights ſhould prove cold, as it often happens in *May*, which is many Times, even at that Seaſon, very hurtful to tender Plants on hot Beds.

But although the hot Bed I have deſcribed is what the Kitchen Gardeners commonly uſe, yet thoſe made with Tanners Bark are much preferable, eſpecially for all tender exotick Plants or Fruits, which require an even Degree of Warmth to be continued for ſeveral Months, which is what cannot be effected by Horſe Dung. The Manner of making theſe Beds is as follows:

There muſt be a Trench dug in the Earth about 3 Feet deep, if the Ground be dry; but if wet, not be above a Foot or 6 Inches deep at moſt, and muſt be raiſed in Proportion above Ground, ſo as to admit of the Tan being laid 3 Feet thick. The Length muſt be proportioned to the Frames intended to cover it, but that ſhould never be leſs than 11 or 12 Feet, and the Width not leſs than 6, which is but a ſufficient Body to continue the Heat. This Trench ſhould be bricked up round the Sides to the above-mentioned Height of 3 Feet, and ſhould be filled in the Spring with freſh Tanners Bark, (*i. e.* ſuch as the Tanners have lately drawn out of their Vats, after they have uſed it for tanning Leather) which ſhould be laid in a round Heap for a Week or ten Days before it is put into the Trench, that the Moiſture may the better drain out of it, which, if detained in too great a Quantity, will prevent its Fermentation; then put it into the Trench, and gently beat it down equally with a Dung Fork; but it muſt not be trodden, which would alſo prevent its heating, by ſettling it too cloſe; then you muſt put on the Frame over the Bed, covering it with the Glaſſes, and in about 10 Days or a Fortnight it will begin to heat; at which Time you may plunge your Pots of Plants or Seeds into it, obſerving not to tread down the Bark in doing of it.

A Bed thus prepared (if the Bark be new and not ground too ſmall) will continue in a good Temper of Warmth for 2 or 3 Months; and when you find the Heat decline, if you ſtir up the Bark again pretty deep, and mix a Load or two of freſh Bark among it, it will cauſe it to heat again, and preſerve its Warmth 2 or 3 Months longer. There are many People who lay ſome hot Horſe Dung in the Bottom of the Trench, under the Bark, to cauſe it to heat; but this is what I would never practiſe, unleſs I wanted the Bed ſooner than the Bark would heat of itſelf, and then I would put but a ſmall Quantity of Dung at Bottom, for that is ſubject to make it heat too violently, and will occaſion its loſing the Heat ſooner than ordinary; and there will never be any Danger of the Bark's heating if it be new, and not put into the Trench too wet, though it may ſometimes be a Fortnight or more before it acquires a ſufficient Warmth, but then the Heat will be more equal and laſting.

The Frames which cover theſe Beds, ſhould be proportioned to the ſeveral Plants they are deſigned to contain: For Example, If they are to cover the Ananas or Pine Apple, the back Part of the Frame ſhould be 3 Feet high, and the lower Part 15 Inches, which will be a ſufficient Declivity to carry off the Wet; and the back ſide will be high enough to contain the Plants that are in fruit, and the lower Side will be ſufficient for the ſhorteſt Plants; ſo that by placing them regularly according to their Height, they will not only have an equal Diſtance from the Glaſſes, but alſo appear much handſomer to the Sight. And although many People make their Frames deeper than what I have allotted, yet I am fully perſuaded, that where there is but Height enough to contain the Plants, without bruiſing their Leaves, it is much better than to allow a larger Space; for the deeper the Frame is made, the leſs will be the Heat of the Air incloſed therein, there being no artificial Warmth but what the Bark affords, which will not heat a large Space of Air; and as the Pine Apple requires to be conſtantly kept very warm, in order to ripen the Fruit well; ſo it will be found upon Trial, that the Depth I have allowed will anſwer that Purpoſe better than a greater.

But if the Bed be intended for taller Plants, then the Frame muſt be made in Depth proportionable thereto; but if it be for ſowing Seeds, the Frame need not be above 14 Inches high at the Back, and 7 deep in the Front, by which Means the Heat will be much greater, and this is commonly the Proportion allowed to the Frames uſually made Uſe of in the Kitchen Gardens. As to their Length, that is generally according to the Fancy of the Owner; but they commonly contain 3 Lights each, which is in the Whole about 11 Feet in Length, though ſometimes they are made to contain 4 Lights; but this is too great a Length for the Boxes, for the Frames thus made are not ſo handy to remove, as when they are ſhorter, and are more ſubject to decay at their Corners. Some indeed have them to contain but 2 Lights, which is very handy for raiſing Cucumber and Melon Plants while young; but this is too ſhort for a Bark Bed, as not allowing Room for a proper Quantity of Bark to continue a Warmth for any conſiderable Time, as was before-mentioned; but for the other Purpoſes, one or two ſuch Frames are very convenient for common Dung Beds.

As to thoſe Frames which are made very deep, it is much the better Way to have them made to take aſunder at the 4 Corners, ſo that they may be removed with Eaſe; otherwiſe it will be very difficult to take the Frame off, when there is Occaſion to put in new Bark, or take out the old. The Manner of making theſe Frames is generally known, or may be much better conceived by ſeeing them than can be expreſſed in Writing, therefore I ſhall forbear ſaying any Thing more on this Head.

HOTTONIA. *Boerh. Ind. alt.* 1. p. 207. *Lin. Gen. Pl.* 186. *Stratiotes. Vaill. Act. Par.* 1719. Water Violet.

The *Characters* are,

The Flower has 1 *Petal, which hath a Tube the Length of the one leaved Empalement, but cut above into* 5 *oblong oval Segments, which ſpread open and are indented at their Extremity. It hath* 5 *ſhort Awl-ſhaped Stamina, ſtanding on the Tube of the Petal oppoſite to the Cuts, terminated by oblong Summits. In the Center is ſituated a globular Germen ending in a Point, ſupporting a ſhort ſlender Style crowned by a globular Stigma, which afterward becomes a Capſule of the ſame Form with* 1 *Cell, filled with globular Seeds, ſitting upon the Empalement.*

We know but one *Species* of this Genus, *viz.*

Hottonia. *Boer. Ind. alt.* 1. p. 207. This is the *Millifolium aquaticum ſive viola aquatica caule nudo. C. B. P.* 141. Water Milfoil, or Water Violet, with a naked Stalk.

This Plant grows naturally in ſtanding Waters, in many Parts of *England*; the Leaves which are for the moſt Part immerſed in the Winter, are finely winged and flat, like moſt of the Sea Plants; theſe extend pretty wide, and at the Bottom have long fibrous Roots, which ſtrike into the Mud; the Flower Stalks riſe 5 or 6 Inches above the Water, they are naked, and toward the Top have 2 or 3 Whorls of purple Flowers, and are terminated by a ſmall Cluſter of the ſame. Theſe Flowers have the Appearance of the Stock-gilliflower, ſo make a pretty Appearance on the Surface of the Water. The Flowers appear in *June.*

It may be propagated in deep ſtanding Waters, by procuring its Seeds when ripe, from the Places of their natural Growth; which ſhould be immediately dropped into the Water where they are deſigned to grow, and the Spring following they will appear; and if they are not diſturbed, they will ſoon propagate themſelves in great Plenty.

HOEING is neceſſary and beneficial to Plants, for two Things: 1ſt, For deſtroying Weeds; 2dly, Becauſe it diſpoſes the Ground the better to imbibe the Night Dews, keeps it in a conſtant Freſhneſs, and adds a Vigour to the Plants and Trees, whoſe Fruit by that Means, becomes better conditioned than otherwiſe it wou'd be.

This Operation is performed by the Hand, with an Inſtrument called a Hoe, which is well known to every Gardener. There are ſeveral Sizes of theſe, the ſmalleſt which is called an Onion Hoe, is not more than 3 Inches broad, and is uſed for hoeinng Onions; not only to cut up the young Weeds, but alſo to thin the Onions, by cutting up all thoſe which are too cloſe. The next Size is near 4 Inches and a Half broad, and is called a Carrot Hoe; this is uſed for hoeing Carrots, or any other Crop which requires the ſame Room as thoſe. The largeſt Size is about 7 Inches broad, and is frequently called a Turnep Hoe, being uſed for hoeing Turneps; but this is generally uſed by the Kitchen Gardeners, for hoeing between all their Crops which are planted out, or ſtand ſo far aſunder as to admit an Inſtrument of this Breadth to paſs between the Plants. Beſides theſe Sort of Hoes, which are contrived to draw toward the Perſon who uſes them, there is another Sort of a different Form, called a *Dutch* Hoe; this is made for the Perſon who uſes it to puſh from him, ſo that he does not tread over the Ground which is hoed. This is a very proper Inſtrument for ſcuffling over the Ground, to deſtroy Weeds, in ſuch Places where the Plants will admit of its being uſed, and a Perſon will go over a much greater Space of Ground in the ſame Time with one of theſe Inſtruments, than with the common Hoe; but this Inſtrument is not ſo proper for hoeing out Crops, ſo as to leave the Plants at a proper Diſtance, nor will it penetrate the Ground ſo far; therefore the other Sort of Hoe is to be preferred to this, becauſe it ſtirs the Ground and looſens the Surface, whereby the Dews penetrate the Ground, and thereby promote the Growth of the Plants.

Of late Years there has alſo been another Inſtrument introduced in the Field Culture, called the Horſe Hoe, which is a Sort of Plough with the Shear ſet more inclining to a horizontal Poſition than the common Plough; but as moſt of the Farmers are at a Loſs how to uſe this Inſtrument, it has been but little uſed in this Country as yet; nor is it likely to be brought into Uſe, unleſs the Garden Farmers near *London*, who are undoubtedly the beſt Huſbandmen in *Europe*, introduce it; for the common Farmers never can be ſuppoſed to alter their old eſtabliſhed Methods, till by Neceſſity they are drove to it: A ſtrong Inſtance we have of this Kind, in the Culture of Turneps, which for many Years were ſown in moſt of the Counties in *England*, but till within about 40 Years paſt, were never hoed, except within 20 or 30 Miles of *London*, where the Gardeners who had been bred in the Kitchen Gardens near *London*, every Seaſon went out in particular Gangs to the different Parts of the Country, and each Party engaged to hoe the Turneps in ſuch a particular Diſtrict, at a certain Price *per* Acre; and from the Succeſs of the Farmers who employed them, their Neighbours were at Length tempted to follow their Example, ſo that it became neceſſary for ſome of their Labourers to underſtand this Work; and from that Time it has prevailed ſo much, that many of the diſtant Counties have now engaged in this Practice: And if the Horſe Hoeing Huſbandry was but well eſtabliſhed among the Farmers near *London*, there would be little Doubt of its ſpreading into the diſtant Counties; but there are great Prejudices againſt it at preſent, moſt of them ariſing from the Ignorance of the Farmers in general, and others from the over Fondneſs of the Author to his own Schemes, which has in many Particulars carried him into many known Abſurdities; and theſe being well known to every practical Farmer and Gardener, are ſufficient Arguments with them againſt making Trial of the uſeful Part of his Scheme.

The Utility of this Method of Huſbandry, is firſt, in proportioning the Number of Plants to the Paſture, which the Ground is ſuppoſed capable of nouriſhing properly. The ſecond is, by frequent ſtirring the Surface of the Land, all Weeds which rob the Crop of its Nouriſhment are deſtroyed, and the Clods of Earth are divided and pulverized, ſo that the Roots of the Plants can more eaſily penetrate them, and ſearch their proper Food; beſides, the Dews and Moiſture are eaſily imbibed in this looſe Ground, whereby the Plants receive a greater Share of Nouriſhment.

There are few Perſons who properly conſider, of what Conſequence the ſtirring and breaking the Surface of the Ground is to all Crops growing therein. I have frequently made Trial of this, when the Crop has been ſo bad as to be thought not worth ſtanding, which has been occaſioned by the great Quantity of Rain which has fallen, whereby the Surface of the Ground has been ſo cloſely bound, that the Plants could find no Nouriſhment, but have changed their uſual Verdure to a purple Colour, and have made no Progreſs; but upon ſlightly digging the Ground and breaking the Clods, the Plants have put out new Roots, and have flouriſhed exceedingly. From many repeated Trials of this Kind I can affirm, that if the Wheat in general was ſowed in Rows, ſo that the Plough may be brought between them in the Spring, to looſen the Ground, which by the Winter's Rains may have been too cloſely bound, the Crop would more than double what is the common Produce.

But the Author of this Scheme was too ſanguine in his Propoſoals, firſt, by aſſerting, that in this Method of Huſbandry, the Land would conſtantly produce the ſame Sort of Crops without Diminution; and ſecondly, it might be done without dreſſing or manuring the Ground; and his Fondneſs for his own Scheme carried him ſo far in the Proſecution of it, as at laſt to have much worſe Crops than any of his Neighbours; however, this ſhould not diſcourage others from the Practice of it, though upon different Principles: For although the Land thus cultivated, will not nouriſh the ſame Plant without manuring ſeveral Years, yet by this Method of Huſbandry I can affirm, that all Crops will be ſo much improved, as to doubly anſwer the Diffetence of Expence, and leſs than a third Part of the Seed will be enough for the ſame Space of Ground. The common Swing Plough, will anſwer all the Intents of this Huſbandry.

HUMIDITY is the Quality commonly called Moiſture, or the Power of wetting others, which Quality ſome Liquors and Fluids are endowed with; and it differs very much from Fluidity, in that it depends altogether on the Congruity of the component Particles of any Liquor to the Pores or Surfaces of ſuch particular Bodies, as it is capable of adhering to.

Thus Quickſilver is not a moiſt Liquor, in Reſpect to our Hands or Clothes, and many other Things it will not ſtick to; but it may be called a moiſt Liquor, in Reſpect to Gold, Lead, or Tin, to the Surfaces of which it will preſently adhere.

Nay, Water itſelf, that wets almoſt every Thing, and is the great Standard of Humidity or Moiſture, is not capable of wetting every Thing; for it ſtands, and runs eaſily off in globular Drops, on the Leaves of Cabbages, and many other Plants; and will not wet the Feathers of Ducks, Swans, and other Water Fowl.

And it is very plain, that it is only the Texture that may cauſe the Fluid to be humid; becauſe neither Qnickſilver alone, nor Biſmuth, will ſtick upon Glaſs; yet being mixed together, they will form a Maſs that will ſtick on it; as is very well known in the Foliating of Looking Glaſſes, in which ſuch a Compoſition is uſed.

HUMULUS. *See* Lupulus.

HURA. *Lin. Gen. Pl.* 965. *Hura*, or Sand Box Tree.

The *Characters* are,

It hath male and female Flowers on the ſame Plant. The male Flowers have no Petal, or ſcarce any Empalement, but a Column of Stamina, joined at Bottom into a Cylinder, ſpreading out at the Top, terminated by ſingle Summits lying over each other. The female Flowers have a ſwelling Empalement of 1 *Leaf, with* 1 *tubulous Petal; the roundiſh Germen is ſituated in the Bottom of the Empalement, ſupporting a long cylindrical Style, crowned by a large Funnel-ſhaped Stigma, which is a plain Convex, divided into* 12 *equal obtuſe Parts. The Germen becomes an orbicular ligneous Fruit, depreſſed at Top and Bottom, having* 12 *deep Furrows, with ſo many Cells, which open at the Top with an Elaſticity, each containing* 1 *round flat Seed.*

We know but 1 *Species* of this Genus, *viz.*

Hura. *Hort. Cliff.* 486. This is the *Hura Americana, Abutili Indici folio. Hort. Amſt.* 2. 131. *Tab.* 66. *American Hura* with the Leaf of the *Indian* Abutilon, commonly called in the *Weſt-Indies* Sand Box Tree.

This grows naturally in the *Spaniſh Weſt-Indies*, from whence it has been introduced into the *Britiſh* Colonies of *America*, where ſome of the Plants are preſerved by Way of Curioſity. It riſes with a ſoft ligneous Stem to the Height of 24 Feet dividing into many Branches, which abound with a milky Juice, and have Scars on their Bark, where the Leaves have fallen off. The Branches are garniſhed with Heart-ſhaped Leaves, thoſe which are the biggeſt are 11 Inches long, and 9 broad in the Middle, indented on their Edges, having a prominent Mid-rib, with ſeveral tranſverſe Veins from that to the Sides, which are alternate; theſe ſtand upon long ſlender Foot Stalks. The male Flowers come out from between the Leaves, upon Foot Stalks, 3 Inches long; theſe are formed into a cloſe Spike, or Column, lying over each other like the Scales of Fiſhes. The female Flowers are ſituated at a Diſtance from the male; theſe have a ſwelling cylindrical Empalement, out of which ariſes the Petal of the Flower, which hath a long Funnel-ſhaped Tube, ſpreading at the Top, where it is divided into 12 Parts, which are reflexed. After the Flower is paſt, the Germen ſwells and becomes a round, compreſſed, ligneous Capſule, having 12 deep Furrows, each being a diſtinct Cell, containing 1 large round compreſſed Seed; when the Pods are ripe, they burſt with an Elaſticity, and throw out their Seeds to a conſiderable Diſtance.

It is propagated by Seeds, which ſhould be ſown early in the Spring, in Pots filled with light rich Earth, and plunged into a hot Bed of Tanners Bark. If the Seeds are freſh, the Plants will appear in about 5 Weeks after the Seeds are ſown. As the Plants will advance very faſt, where due Care is taken of them; they ſhould have a large Share of freſh Air admitted to them in warm Weather, otherwiſe they will draw up too weak. When the Plants are about 2 Inches high, they ſhould be tranſplanted each into a ſeparate ſmall Pot filled with light rich Earth, and plunged again into the hot Bed of Tanners Bark, being careful to ſhade them from the Heat of the Sun, until they have taken new Root, after which Time they muſt have free Air admitted to them, by raiſing the Glaſſes in Proportion to the Warmth of the Seaſon, and they ſhould be frequently, but gently, watered. When the Plants have filled theſe ſmall Pots with their Roots, they muſt be ſhaken out of them, and their Roots trimmed, and then placed in larger Pots, which ſhould be filled with the like rich Earth, and plunged again into the hot Bed, where they ſhould remain till *Michaelmas*, provided the Plants have Room, without touching the Glaſſes, at which Time they muſt be removed into the Bark Stove, and plunged in the warmeſt Part thereof: during the Winter Seaſon they muſt be ſparingly watered, for as the Plants have ſucculent Stalks, much Moiſture will rot them; they muſt alſo be kept very warm, otherwiſe they will not live in this Country. In Summer they muſt have a large Share of freſh Air in warm Weather, but they muſt not be removed into the open Air, for they are too tender to live abroad in the warmeſt Part of the Year in this Country.

This Plant is now pretty common in the *Engliſh* Gardens, where there are Collections of tender Plants preſerved, ſome of which are grown to the Height of 12 or 14 Feet, and many of them have produced Flowers, but there has not been any of their Fruit produced as yet in *England*.

As theſe Plants have ample Leaves, of a beautiful green Colour, they afford an agreeable Variety among other tender exotick Plants in the Stove, for where they are kept warm, and duly refreſhed with Water, they retain their Leaves all the Year in Verdure.

The Fruit of this Plant is, by the Inhabitants of the *Weſt Indies*, cut open on the Side where the Foot Stalk grew, and the Seeds carefully taken out, after which the Shells are uſed to contain Sand for Writing, which gave Riſe to the Name of Sand Box. When theſe Fruit are brought entire into *England*, it is very difficult to preſerve them, for when the Heat of the Summer comes on, they uſually burſt with an Exploſion, and ſcatter their Seeds about, and from the Noiſe made by the ripe Fruit, it was by *Hernandez* titled, *Arbor Crepitans*.

HYACINTHUS. *Tourn. Inſt. R. H.* 344. *Tab.* 180. *Lin. Gen. Pl.* 385. Hyacinth; in *French*, *Jacinte*.

The *Characters* are,

The Flower has no Empalement. It has 1 *Bell-ſhaped Petal, whoſe Rim is cut into* 6 *Parts, which are reflexed, and* 3 *Nectaria on the Point of the Germen, with* 6 *ſhort Awl-ſhaped Stamina, terminated by Summits, which cloſe together. In the Center is ſituated a roundiſh three-cornered Germen, having* 3 *Furrows ſupporting a ſingle Style, crowned by an obtuſe Stigma. The Germen becomes a roundiſh* 3 *cornered Capſule, having* 3 *Cells, which contain roundiſh Seeds.*

The *Species* are,

1. HYACINTHUS *corollis campanulatis ſexpartitis apice revolutis. Hort. Cliff.* 125. Hyacinth with Bell-ſhaped Petals, divided into 6 Parts, reflexed at their Tops. *Hyacinthus oblongo flore cæruleus major. C. B. P.* 43. Greater Hyacinth with an oblong blue Flower, and the *Hyacinthus Anglicus. Ger.* 99. *Engliſh* Hyacinth, or Hare Bells.

2. HYACINTHUS *corollarum exterioribus petalis diſtinctis, interioribus coadunatis. Lin. Sp. Pl.* 317. Hyacinth whoſe exterior Part of the Flower hath diſtinct Petals, but the interior joined. *Hyacinthus obſoleto flore. C. B. P.* 44. Hyacinth with a worn-out Flower.

3. HYACINTHUS *corollis campanulatis ſexpartitis, floribus utrinque diſpoſitis.* Hyacinth with Bell-ſhaped Petals, which are divided into 6 Parts, and Flowers ranged on each Side of the Stalk. *Hyacinthus floribus campanulæ utrinque diſpoſitis. C. B. P.* 44. Hyacinth with Bell-ſhaped Flowers diſpoſed on every Side the Stalk.

4. HYACINTHUS *corollis campanulatis ſexpartitis racemo cornuo. Lin. Sp. Pl.* 317. Hyacinth with Bell-ſhaped Petals, divided into 6 Parts, and a nodding Branch of Flowers. *Hyacinthus floribus campanulæ, uno verſu diſpoſitis. C. B. P.* 44. Hyacinth with Bell-ſhaped Flowers ranged on one Side the Stalk.

5. HYACYNTHUS *corollis campanulatis ſemiſexfidis baſi cylindricis. Hort. Upſal.* 85. Hyacinth with Bell-ſhaped Petals, cut half Way into 6 Parts, and a cylindrical Baſe. *Hyacinthus oblongo cæruleo flore minor. C. B. P.* 44. Leſſer Hyacinth with an oblong blue Flower.

6. HYACINTHUS *corollis infundibuliformibus ſemiſexfidis baſi ventricoſis. Hort. Upſal.* 85. Hyacinth with Funnel-ſhaped Petals cut half into 6 Parts, and ſwelling

at the Baſe. *Hyacinthus Orientalis albus primus. C. B. P.* 44. Early white Eaſtern Hyacinth.

The Sorts here mentioned, are all of them diſtinct Species, of which there are ſeveral Varieties, eſpecially of the 6th, which have been cultivated with ſo much Art, as to render ſome of them the moſt valuable Flowers of the Spring; in *Holland* the Gardens abound with them, where the Floriſts have raiſed ſo many Varieties as to amount to ſome Hundreds, and ſome of their Flowers are ſo large, double, and finely coloured, that their Roots are valued at 20 or 30 Pounds Sterling each Root; to enumerate theſe Varieties here, would ſwell this Work to very little Purpoſe, as every Year produces new Kinds.

The 1ſt Sort grows naturally in Woods, and near Hedges, in Lands which have lately been Woods, in many Parts of *England*, ſo is ſeldom admitted into Gardens, but the poor People who make it their Bnſineſs to gather the wild Flowers of the Fields and Woods for Noſegays, &c. bring great Quantities of them in Spring to *London*, and ſell them about the Streets.

There is a Variety of this with white Flowers, kept in ſome Gardens, which only differs in the Colour of their Flowers from the other.

The 2d Sort is preſerved in ſome few Gardens for Variety, but as it hath as little Beauty as the firſt, is ſeldom allowed a Place in the Flower Garden. The Flowers are narrower than thoſe of the firſt Sort, and ſeem as if their Petals were divided to the Bottom, 3 of the outer Segments being ſeparated from the other, ſtanding at a ſmall Diſtance from the 3 Interiors, but they are all joined at their Baſe; when the Flowers firſt appear, they are of a light blue Colour, but before they decay, they fade to a worn-out purple Colour. This flowers early in the Spring, and grows naturally in *Spain* and *Mauritania*.

The 3d Sort grows naturally in *Spain* and *Italy*; this hath blue Flowers of the open ſpread Bell-ſhape, divided into 6 Segments almoſt to the Bottom, and diſpoſed on every Side the Stalk. The Stalks riſe about 9 Inches high, and when the Roots are ſtrong, the Thyrſe of Flowers is large. This flowers about the ſame Time with the firſt Sort, and was formerly preſerved in Gardens, but ſince there have been ſo many finer Flowers raiſed from the Seeds of the Eaſtern Hyacinths, they have been almoſt totally neglected, ſo that they are ſeldom ſeen but in old Gardens.

The 4th Sort ſeems to be a Variety of the firſt, the Flowers being ranged for the moſt Part on one Side of the Stalk, and the Top of the Bunch is always bent on one Side. The Flowers are of a bluſh Peach Colour, and appear about the ſame Time as the firſt Sort.

The 5th Sort grows naturally in *Spain*; this hath a ſmaller Flower than either of the former Sorts, and comes earlier in the Seaſon. The Petal is cut into 6 Parts half the Length, and is reflexed at the Brim; the lower Part is cylindrical, a little ſwelling at the Baſe, and of a deeper blue than either of the former. This was formerly called by the Gardeners the Coventry blue Hyacinth.

The 6th Sort is the Eaſtern Hyacinth, of which we formerly had no other Varieties in the *Engliſh* Gardens, but the ſingle and double white and blue flowering; but from the Seeds of theſe there were a few others raiſed in *England*, and by the *Flemiſh* Gardeners who came over annually with their flower Roots to vend in *England*, but the Gardeners in *Holland* have within the laſt 50 Years raiſed ſo many fine Varieties, as to render the former Sorts of no Value.

But thoſe who are deſirous to preſerve any of the old Sorts, need not be at much Trouble about it, for their Roots propagate in great Plenty in any Soil, or Situation, and require no other Care, but to take up their Roots every third Year, ſoon after their Leaves decay, and plant them again in Autumn, for if they are permitted to remain longer in the Ground, their Roots will multiply to ſo great a Degree, as to render their Flowers very ſmall and weak.

All the different Sorts of Hyacinths are propagated by Seeds or Offſets from the old Bulbs; the former Method has been but little practiſed in *England* till very lately, but in *Holland* and *Flanders* it hath been followed for many Years, whereby they have obtained a very great Variety of the moſt beautiful Flowers of this Kind, and it is owing to the Induſtry of the Floriſts in theſe Countries, that the Lovers and Delighters in Gardening are ſo agreeably entertained, not only with the curious Variety of this, but of moſt other bulbous rooted Flowers, few other Floriſts thinking it worth their Trouble to wait 4 or 5 Years for the Flowers of Plants of which perhaps ſcarce one in forty may deſerve to be preſerved; but they do not conſider that it is only the Loſs of the 4 or 5 firſt Years after ſowing, for if they continue ſowing every Year after they begin, there will be a Succeſſion of Flowers annually, which will conſtantly produce ſome Sorts that may be different from what they have before ſeen, and new Flowers being always the moſt valuable to ſkilful Floriſts (provided they have good Properties to recommend them), will always be a ſufficient Recompence for the Trouble, and Loſs of Time.

The Method of raiſing theſe Flowers from Seed is as follows: Having provided yourſelf with ſome good Seed (which ſhould be ſaved from either ſemi-double, or ſuch ſingle Flowers as are large, and have good Properties), you muſt have a Parcel of ſquare ſhallow Boxes or Pots, which muſt be filled with freſh light ſandy Soil, laying the Surface very level; then ſow your Seeds thereon as equally as poſſible, covering it about half an Inch thick with the ſame light Earth; the Time for this Work is about the Middle of *Auguſt*. Theſe Boxes, or Pots, ſhould be placed where they may enjoy the Morning Sun only until the latter End of *September*, at which Time they ſhould be removed into a warmer Situation, and towards the End of *October* they ſhould be placed under a common hot Bed Frame, where they may remain during the Winter and Spring Months, that they may be protected from hard Froſts; though they ſhould be expoſed to the open Air when the Weather is mild, by taking off the Glaſſes. In *February* the young Plants will begin to appear above Ground, at which Time they muſt be carefully ſcreened from Froſts, otherwiſe they will be deſtroyed when they are ſo young; but you muſt never cover them at that Seaſon but in the Night, or in very bad Weather, for when the Plants are come up, if they are cloſe covered, they will draw up very tall and ſlender, and thereby prevent the Growth of their Roots. At the

End of *March*, if the Weather proves good, you may remove the Boxes out of the Frame, placing them in a warm Situation, obſerving, if the Seaſon be dry, to refreſh them now and then with a little Water, as alſo to keep them very clear from Weeds, which would ſoon overſpread the tender Plants, and deſtroy them.

Towards the latter End of *April*, or Beginning of *May*, theſe Boxes ſhould be removed into a cooler Situation; for the Heat of the Sun at that Seaſon would be too great for theſe tender Plants, cauſing their Blades to decay much ſooner than they would, if they were ſcreened from its Violence. In this ſhady Situation they ſhould remain during the Heat of Summer, obſerving to keep them conſtantly clear from Weeds; but you muſt not place them under the Dripping of Trees, *&c.* nor ſhould you give them any Water after their Blades are decayed, for that would infallibly rot the Roots. About the latter End of *Auguſt* you ſhould ſift a little light rich Earth over the Surface of the Boxes, and then remove them again into a warmer Situation, and treat them, during the Winter, Spring, and Summer Months, as before directed; and about the Middle of *Auguſt* you ſhould prepare a Bed of light rich ſandy Soil, in Proportion to the Quantity of your Seedling Plants, and having levelled the Surface very even, you ſhould take out the Earth from the Boxes in which your Plants were raiſed, into a Sieve, in order to get out all the Roots, which by this Time (if they have grown well) will be about the Thickneſs of a ſmall Quill; theſe Roots ſhould be placed upon the Bed at about 2 or 3 Inches aſunder, obſerving to ſet the bottom Part of their Roots downwards, then cover them over 2 Inches thick with the ſame light Earth; but as it will be impoſſible to get all the ſmall Roots out of the Earth in the Boxes, you ſhould ſpread the Earth upon another Bed equally, and cover it over with light Earth, by which Method you will not loſe any of the Roots, be they ever ſo ſmall.

Theſe Beds muſt be arched over with Hoops, and in very hard froſty Weather covered with Mats, *&c.* to protect them from Froſt; and in the Spring, when the green Leaves are above Ground, if the Weather ſhould be very dry, you muſt refreſh them with Water, but do this ſparingly, for nothing is more injurious to theſe Bulbs, than too great Quantities of Moiſture. During the Summer Seaſon you muſt conſtantly keep the Beds clear from Weeds, but after the Blades are decayed, you muſt never give them any Water; and in Autumn you ſhould ſtir the Surface of the Bed with a very ſhort Hand Fork, being exceeding careful not to thruſt it ſo deep as to touch the Roots, which, if hurt, are very ſubject to periſh ſoon after. Then ſift a little freſh light rich Earth over the Bed about an Inch thick, or ſomewhat more, and in Winter cover them again (as was before directed.) In this Bed the Roots may continue 2 Years, obſerving to treat them, both in Summer and Winter, as before; then the third Year the Roots ſhould be carefully taken up when their Leaves decay, and kept out of the Ground till *Auguſt*, when they ſhould be planted into new Beds prepared as before, 6 Inches aſunder; in theſe Beds the Roots may remain till they flower, during which Time they ſhould be treated as before, with this Difference only, that inſtead of covering them with Mats in Winter, the Surface of the Ground ſhould be covered with Tanner's Bark.

When their Flowers begin to ſhew themſelves, you ſhould mark all ſuch as appear to have good Properties, by thruſting a ſmall Stick down by each Root, which Roots, at the Time for taking them up, ſhould be ſelected from the reſt, and planted by themſelves, though I would by no Means adviſe the rejecting any of the other Roots, until they have blown two Years, before which you cannot aſcertain their Value. When the green Leaves of theſe Plants begin to decay, their Roots muſt be taken up; and the Earth of the Bed being raiſed into a Ridge, the better to ſhoot off the Moiſture, they ſhould be laid into the Earth again in a horizontal Poſition, leaving the green Leaves hanging downwards from the Roots, whereby the great Moiſture contained in their very ſucculent Leaves and Flower Stalks is exhaled, and prevented from entering the Roots, which, when ſuffered to return into them, is very often the Cauſe of their rotting. In this Ridge the Roots ſhould remain until the Leaves are quite dried off, when they muſt be taken up, and after being cleared of all Manner of Filth, which would be hurtful to them; they muſt be laid up in Boxes, where they may be preſerved dry until *September*, which is the proper Seaſon for planting them again; the Method of doing this ſhall be hereafter mentioned, when we treat of the Management of old Roots.

I ſhall now proceed to the Culture of ſuch Hyacinths as have either been obtained from *Holland*, or are of our own Product from Seeds, that are very beautiful, and worthy to be preſerved in Collections of good Flowers, and it hath been the Want of Skill in the Management of theſe noble Flowers, which has occaſioned the ill Succeſs moſt People have had with them in *England*, whereby they have been neglected, ſuppoſing their Roots to degenerate after they have flowered in *England*; which is a great Miſtake, for were the Roots managed with the ſame Art as is practiſed in *Holland*, I am fully convinced they would thrive full as well in *England* as there, or elſewhere, as I have experienced; for, from ſome Hundreds of Roots which I have received from *Holland* at two or 3 different Times, I have had a very great Increaſe of their Roots, which were as large, and produced as many Flowers upon their Stems, as the ſame Sort ever did in *Holland*.

The Soil in which theſe Flowers ſucceed beſt, is a light ſandy freſh rich Earth, which may be compoſed after the following Manner: Take half freſh Earth from a Common, or Paſture Land, which is of a ſandy Loam; this ſhould not be taken above 8 or 9 Inches deep at moſt, and if you take the Turf, or green Sward with it, it will ſtill be better, provided you have Time to let it rot; to this you ſhould add a 4th Part of Sea Sand, and the other 4th Part of rotten Cow Dung, mix theſe well together, and caſt it into a Heap, where it may remain until you uſe it, obſerving to turn it over once in 3 Weeks or a Month. If this Compoſt be made 2 or 3 Years before it is uſed, it will be much the better; but if you are obliged to uſe it ſooner, then it ſhould be oftener turned, that the Parts may the better unite.

This Soil ſhould be laid 2 Feet deep on the Beds, deſigned for your Hyacinths, and you may lay a little rotten Cow Dung, or Tanners Bark at the Bottom, which may be within reach of the Fibres, but it ſhould by no Means touch the Bulb. If the Soil be very wet, where theſe Beds are made, you ſhould raiſe them 10 or 12 Inches above the Surface, but if it be dry, they need not be raiſed above 3 or 4 Inches.

The Manner of preparing the Beds is as follows: Firſt, Take all the former old Earth out of the Bed to the Depth you intend, which ſhould be 3 Feet; then ſpread a little rotten Dung, or Tan, in the Bottom, laying it very level, upon this you ſhould lay the above-mentioned Earth, 10 or 12 Inches thick, levelling it very even; then ſcore out the Diſtances for the Roots, which ſhould be 8 Inches ſquare, in ſtrait Rows each Way, after which, place your Roots exactly in the Squares, obſerving to ſet the bottom Part downward; then cover the Roots 6 Inches deep with the ſame prepared Earth, being very careful in doing this, not to diſplace any of them; and if the Tops of theſe Beds are made a little rounding, to ſhoot off the Wet, it will be of Service, provided they are not made too high, which is a Fault the other Way.

The beſt Seaſon for planting theſe Roots is towards the Middle or latter End of *September*, according to the Earlineſs or Lateneſs of the Seaſon, or the Weather which then happens; but I would adviſe you never to plant them when the Ground is extreme dry, unleſs there be a Proſpect of ſome Rain ſoon after; for if the Weather ſhould continue dry for a conſiderable Time after, the Roots will receive a Mouldineſs, which will certainly deſtroy them.

Theſe Beds will require no farther Care until the Froſt comes on very ſevere, at which Time they ſhould have ſome rotten Tan ſpread over the Bed, about 4 Inches thick, and if the Alleys on each Side of the Bed are filled up, either with rotten Tan, Dung, or Sand, it will prevent the Froſt from penetrating the Ground to the Roots, and ſecure them from being deſtroyed; but when the Winters prove very ſevere, it will alſo be proper to have ſome Peas Haulm, or ſuch like Covering, laid over them, which will keep out the Froſt better than Mats, and lying hollow, will admit the Air to the Surface of the Ground, and alſo permit the Exhalations to paſs off, whereby the Earth will remain dry, and prevent the Roots from rotting, which has often happened when the Beds have been too cloſe covered. But you muſt obſerve to take off this Covering whenever the Weather is mild, and only let it continue on in very hard Froſts, for where the Beds are covered with Tan or Sea Coal Aſhes, no common Froſt can penetrate through, ſo the other Coverings are uſeleſs, except in very ſevere Froſt; for a ſmall Froſt cannot injure the Roots before the green Leaves appear above Ground, which is ſeldom before the Beginning of *February*, at which Time the Beds muſt be arched over with Hoops, that they may be covered either with Mats, Canvas, or ſome other light Covering, to prevent the Froſt from injuring the Buds as they ariſe above Ground; but theſe Coverings muſt be conſtantly taken off every Day when the Weather is mild, otherwiſe the Flower Stems will be drawn up to a great Height, and become very weak, and the Foot Stalks of the Flowers will be long and ſlender, and ſo rendered incapable of ſupporting the Bells, which is a great Diſadvantage to the Flowers, for one of their greateſt Beauties conſiſts in the regular Diſpoſition of their Bells. When theſe Hoops are fixed over the Beds, the rotten Tan ſhould be taken off them, in doing which, great Care ſhould be taken not to bruiſe or injure the Leaves of the Hyacinths, which by that Time will be beginning to break out of the Ground with the Flower Stem, therefore the Tan ſhould be removed by the Hands, or if any Inſtrument is uſed in doing it, there muſt be great Caution uſed.

When the Stems of the Flowers are advanced to their Height, before the Flowers expand, you ſhould place a ſhort Stick down by each Root, to which, with a Wire formed into a Hoop, the Stem of the Flowers ſhould be faſtened, to ſupport them from falling, otherwiſe, when the Bells are fully expanded, their Weight will incline them to the Ground, eſpecially if not ſcreened from Wind and Rain.

During their Seaſon of flowering they ſhould be covered in the Heat of the Day from the Sun, and alſo from all heavy Rains, but they ſhould be permitted to receive all gentle Showers, as alſo the Morning and Evening Sun; but if the Nights are froſty, they muſt be conſtantly defended therefrom. With this Management you may continue your Hyacinths in Beauty at leaſt one whole Month, and ſometimes more, according to their Strength, or the Favourableneſs of the Seaſon.

When their Flowers are quite decayed, and the Tops of their Leaves begin to change their Colour, you muſt carefully raiſe the Roots out of the Ground with a narrow Spade, or ſome other handy Inſtrument; this is what the *Dutch* Gardeners term lifting them; in doing this, the Inſtrument muſt be carefully thruſt down by the Side of the Root, being careful not to bruiſe or injure it, as alſo to put it below the Bottom of the Root; then by forcing this Inſtrument on one Side, the Fibres of the Root are raiſed and ſeparated from the Ground. The Deſign of this is, to prevent their receiving any more Nouriſhment from the Ground; for by imbibing too much Moiſture at this Seaſon, the Roots frequently rot after they are taken up; about a Fortnight after this Operation, the Roots ſhould be entirely taken out of the Ground, and the Earth of your Beds raiſed into a high ſharp Ridge, laying the Roots into it in a horizontal Poſition, with their Leaves hanging out, for the Reaſon before given.

In this Poſition the Roots ſhould remain until the green Leaves are entirely decayed, which perhaps may be in 3 Weeks Time. This is what the *Dutch* Gardeners term, the Ripening their Roots, becauſe by this Method the Roots become firm, and the outer Cover is ſmooth, and of a bright purple Colour; whereas thoſe Roots which are permitted to remain undiſturbed, till the Leaves and Stalks are quite decayed, will be large, ſpongy, and their outer Coats will be of a pale Colour, for the Stems of many of theſe Flowers are very large, and contain a great Quantity of Moiſture, which, if ſuffered to return into the Roots, will infallibly cauſe many of them to periſh. After they are ſo ripened, you muſt take them out of the Ground, and wipe them clean with a ſoft woollen Cloth, taking off all the decayed

cayed Parts of the Leaves and Fibres, putting them into open Boxes where they may lie ſingly, and be expoſed to the Air, but they muſt be preſerved carefully from Moiſture; nor ſhould they be ſuffered to remain where the Sun may ſhine upon them; in this Manner they may be preſerved out of the Ground until *September*, which is the Seaſon for planting them again, at which Time you muſt ſeparate all the ſtrong flowering Roots, planting them in Beds by themſelves, that they may make an equal Appearance in their Flowers; but the Offſets and ſmaller Roots ſhould be planted in another ſeparate Bed for one Year, in which Time they will acquire Strength, and by the ſucceeding Year will be as ſtrong as the older Roots.

The ſingle and ſemi-double Flowers ſhould be planted alſo in a Bed by themſelves, where they ſhould be carefully ſheltered (as was directed before) from the Froſt, until the Flowers are blown; at which Time their Covering ſhould be entirely removed, and they ſuffered to receive the open Air; which, though it may ſoon deface the Beauty of the Flowers, yet is abſolutely neceſſary to promote their ſeeding; and when the Seeds are quite ripe, you muſt cut off the Veſſels and preſerve them, with the Seeds therein, until the Seaſon for ſowing it. But you muſt obſerve, that after theſe Flowers have produced Seeds, they ſeldom flower ſo well again, at leaſt not in two Years after; ſo that the beſt Method to obtain good Seeds is, to plant new Roots every Year for that Purpoſe; although theſe Roots are, by moſt Perſons, taken up every Year, yet if the Beds are well prepared for them, they may remain two Years in the Ground unremoved, and the Roots will flower ſtronger the ſecond Year than the firſt; but thoſe Perſons who cultivate them for Sale, every Year take up their Roots which are large and ſaleable; but the Offſets and ſmall Roots, they uſually leave 2 Years in the Ground.

There are ſome Perſons who let their Hyacinth Roots remain 3 or 4 Years unremoved, by which they have a much greater increaſe of Roots, than when they are annually taken up; but the Roots by this great Increaſe are frequently degenerated, ſo as to produce ſingle Flowers, therefore I ſhould adviſe the taking up the Roots every other Year; and thoſe of the moſt valuable Kinds every Year, which is the moſt certain Method to preſerve them in their greateſt Perfection, though the Increaſe may not be ſo great; and if theſe Roots are planted 3 Weeks or a Month earlier in Autumn than is before directed, it will cauſe them to produce ſtronger Flowers; and thoſe Roots which are annually removed, will be rounder and firmer, than ſuch as ſtand two Years unremoved.

For the other Sorts of Hyacinth, *ſee* Muſcari *and* Ornithogalum.

HYACINTHUS TUBEROSUS. *See* Crinum.

HYDRANGEA. *Gron. Flor. Virg.* 50. *Lin. Gen. Pl.* 492. We have no *Engliſh* Title for this Genus.

The *Characters* are,

The Flower hath a ſmall permanent Empalement of 1 *Leaf, indented in* 5 *Parts, and* 5 *roundiſh Petals which are equal, and larger than the Empalement. It hath* 10 *Stamina, alternately longer than the Petal, terminated by roundiſh Summits. Under the Flower is ſituated a roundiſh Germen, ſupporting* 2 *ſhort Styles ſtanding apart, crowned by permanent obtuſe Stigmas. The Germen turns to a roundiſh Capſule, crowned by the* 2 *horned Stigmas, divided tranſverſly into* 2 *Cells, filled with ſmall angular Seeds.*

We know but one *Species* of this Genus, *viz.*

HYDRANGEA. *Gron. Flor. Virg.* 50.

This Plant grows naturally in *North America*, from whence it has been brought within a few Years paſt to *Europe*, and is now preſerved in Gardens for Variety, more than its Beauty. It hath a ſpreading fibrous Root, from which is ſent up many ſoft, pithy, ligneous Stalks, which riſe about 3 Feet high, garniſhed at each Joint, with two oblong Heart-ſhaped Leaves placed oppoſite, ſtanding on Foot Stalks about 1 Inch long; the Leaves are 3 Inches long, and 2 broad near their Baſe, ſawed on their Edges, and have many Veins running from the Mid-rib upward to their Borders; they are of a light green, and fall away in the Autumn; the Flowers are produced at the Top of the Stalks, in Form of a Corymbus; they are white, compoſed of 5 Petals, with 10 Stamina ſurrounding the Style. Theſe appear toward the End of *July* and in *Auguſt*, but do not often perfect their Seeds in *England*.

This is eaſily propagated by parting the Roots; the beſt Time for this is the latter End of *October*, which is alſo the beſt Time to tranſplant them: The Plants ſhould have a moiſt Soil, for they grow naturally in marſhy Places; they require no other Culture but to keep them clear from Weeds, and dig the Ground between them every Winter. The Roots are perennial, and if in very ſevere Froſt the Stalks are killed, they will put out new Ones the following Spring.

HYDROCOTYLE, Water Navelwort.

This Plant grows in great Plenty in moiſt Places in moſt Parts of *England*, and is never cultivated for Uſe, ſo I ſhall paſs it over with only naming it.

HYDROLAPATHUM. *See* Lapathum.

HYDROPHYLLON. *Lin. Gen. Pl.* 187. *Hydrophyllon. Tourn. Inſt. R. H.* 81. *Tab.* 16. Water Leaf.

The *Characters* are,

The Flower has a permanent Empalement of 1 *Leaf, cut into* 5 *Segments which ſpread open. It hath* 1 *Bell-ſhaped Petal, divided into* 5 *Parts, indented at their Points; under each of theſe Segments is fixed a Nectarium ſituated about the Middle, which ſhut up Lengthways by* 2 *Lamellæ. It hath* 5 *Stamina longer than the Petal, terminated by oblong proſtrate Summits, and an oval-pointed Germen, ſupporting an Awl-ſhaped Style the Length of the Stamina, crowned by a bifid ſpreading Stigma. The Germen becomes a globular Capſule with* 1 *Cell, incloſing* 1 *large round Seed.*

We know but one *Species* of this Genus, *viz.*

HYDROPHYLLON *Morini. Joncq. Hort.* Water Leaf of *Morinus*.

This Plant grows naturally in *Canada*, and many other Parts of *America*, on moiſt ſpongy Ground. The Root is compoſed of many ſtrong fleſhy Fibres, which ſpread wide on every Side, from which ariſe many Leaves with Foot Stalks 5 or 6 Inches long, jagged into 3, 5, or 7 Lobes, almoſt to the Mid-rib; theſe are indented on their Edges, and have ſeveral Veins running from the Mid-rib to the Sides; they are of a lucid green, and in the Spring have Water ſtanding on the Cavities, from whence I ſuppoſe *Morinus* gave it the Title of Water Leaf, and not from the Plant growing in Water, as *Tournefort* conjectures. The Flowers riſe with Foot Stalks from the Root, having 1 or 2 ſmall Leaves of the ſame Shape with the lower; the Flowers are produced in looſe Cluſters hanging downward, they are of a dirty white and Bell-ſhaped, ſo make no great Figure. They appear in *June*, and the Seeds ſometimes ripen here in *Auguſt*.

This Plant is very hardy in Reſpect to Cold, but it ſhould be planted in a moiſt rich Soil; for if it is planted in a dry warm Soil, it will not live, unleſs conſtantly watered in dry Weather. It may be propagated by parting the Roots, which ſhould be done in Autumn, that the Plants may be well rooted before Spring, for otherwiſe they will require a great Deal of Water. It requires a moiſt Soil and ſhady Situation.

HYDROPIPER, the common biting Arſe-ſmart, which grows in great Plenty in moiſt Places near Ditches Sides almoſt every where.

HYGROMETER is a Machine or Inſtrument contrived to ſhew or meaſure, the Moiſtneſs and Drineſs of the Air, according as it abounds with moiſt or dry Vapours, and to meaſure and eſtimate the Quantity of ſuch Moiſtneſs and Drineſs.

There are divers Kinds of Hygrometers; for whatever Body either ſwells or ſhrinks by Drineſs or Moiſture, is capable of being formed into an Hygrometer; ſuch are the Woods of moſt Kinds, particularly Aſh, Deal, Poplar, *&c.* ſuch alſo is a Cord, Cat Gut, *&c.*

Stretch a Hempen Cord or Fiddle String along a Wall, bringing it over a Truckle or Pully; and to the other End tie a Weight, unto which fit a Style or Index; on the ſame Wall fit a Plate of Metal divided into any Number of equal Parts, and the Hygrometer is complete.

For it is a Matter of undoubted Obſervation, that Moiſture ſenſibly ſhortens the Length of Cords and Strings; and that as the Moiſture evaporates, they return to their former Length, and the like may be ſaid of a Fiddle String.

The Weight therefore, in the preſent Caſe, upon an Increaſe of the Moiſture of the Air, will aſcend, and upon a Diminution of the ſame will deſcend.

Hence, as the Index will ſhew the Spaces of Aſcent and Deſcent, and thoſe Spaces are equal to the Increments and Decrements of the Length of the Cord or Gut, the Inſtrument will diſcover whether the Air be more or leſs humid now, than it was at another given Time.

The ordinary Contrivance with Whip Cord is one of the eaſieſt, for that will infallibly ſhorten and lengthen as the Air grows moiſter and drier.

Some recommend a Cat Gut as the beſt, which may be a Yard in Length ſuſpended, having a Plumbet or Piece of Lead, with an Index or Pointer hanging at the lower End, by Means of which the Cat Gut will twiſt or untwiſt as the Air dries or moiſtens, and ſhorten and lengthen ſo as to raiſe and ſink the Plumbet with the Index, and this Index will point out the Degree ſought for.

The Weight of this Lead or Plumbet, ſhould be about two Ounces.

Some Perſons who approve a fine Whip Cord inſtead of Cat Gut, uſe a greater Weight of Lead; the twiſting and untwiſting of the Cat Gut or Whip Cord, will make the Lead with the Index turn round, as well as riſe and fall. The Degrees may be made upon an open Screw of Braſs within, with which the Plumbet and Index has its Motion.

When you are provided with a Barometer and Hygrometer, compare the Motions of the one with the other, in order to judge what Proportion the Riſe or Fall of the Quickſilver in the Barometer bears to the twiſting of the Cat Gut or Whip Cord; the Degrees of which Motion may be obſerved by the Index or Pointer of the Hygrometer; and at the ſame Time both theſe muſt be compared with the riſing and falling of the Spirit in a Thermometer, to know what Degree of Heat or Cold attends every different Change of Weather.

HYGROSCOPE, a Machine the ſame as the Hygrometer, and for the ſame Uſes.

Theſe Inſtruments are of good Uſe in Conſervatories for meaſuring or ſhewing the Dampneſs or Drineſs of them in the Winter Seaſon.

HYMENÆA. *Lin. Gen. Pl.* 1100. *Courbaril. Plum. Nov. Gen.* 49. *Tab.* 14. Locuſt Tree.

The *Characters* are,

The outward Involucrum of the Flower is divided into 2 Parts, the inward is of 1 Leaf indented in 5 Parts; the Flower hath 5 Petals, which are equal in Size, and ſpread open. It hath 10 declining Stamina, which are ſhort, and terminated by oblong Summits. In the Center is ſituated an oblong Germen, ſupporting a declining Style, crowned by an acute Stigma. The Germen becomes a large oblong Pod, with a thick ligneous Shell, divided into ſeveral Partitions tranſverſly, in each of which is lodged 1 compreſſed large Seed, ſurrounded with a farinaceous Pulp.

We know but one *Species* of this Genus, *viz.*

Hymenæa. *Hort. Cliff.* 484. This is the *Courbaril bifolia, flore pyramidato. Plum. Nov. Gen.* 49. Two leaved *Courbaril* with a pyramidal Flower, commonly called Locuſt Tree in *America*.

This is a very large ſpreading Tree in the *Weſt-Indies*, where it grows in great Plenty; It hath a large Stem covered with a ruſſet Bark, which divides into many ſpreading Branches, garniſhed with ſmooth ſtiff Leaves, which ſtand by Pairs, their Baſe joining at the Foot Stalk, to which they ſtand oblique, one Side being much broader than the other, the two outer Sides being rounded, and their Inſide ſtraight, ſo that they reſemble a Pair of Sheep Sheers; they are pointed at the Top, and ſtand alternately on the Stalk. The Flowers are produced in looſe Spikes at the End of the Branches, ſome of the ſhort ligneous Foot Stalks ſupporting 2, and others 3 Flowers, which are compoſed of 5 yellow Petals ſtriped with purple; the Petals are ſhort and ſpread open; the Stamina are much longer, and of a purpliſh Colour; theſe Flowers are ſucceeded by thick, fleſhy, brown Pods, ſhaped like thoſe of the Garden Bean; they are 6 Inches long, and 2 Inches and a Half broad, of a purpliſh brown Colour, and of a ligneous Conſiſtence, with a large Suture on both Edges; theſe contain 3 or 4 roundiſh compreſſed Seeds, divided by tranſverſe Partitions.

The Wood of this Tree is eſteemed as good Timber in the *Weſt-Indies*, and it yields a fine clear Reſin called *Gum Anime* in the Shops, which makes an excellent Varniſh.

It is eaſily raiſed from the Seeds if they are freſh; theſe muſt be ſown in Pots, and plunged into a hot Bed of Tanners Bark: There ſhould be but one Seed put into each Pot, or if there is more, when the Plants appear, they ſhould be all drawn out to one ſoon after they come up, before their Roots entangle, when it will be hazardous doing it; for if great Care is not taken, the Plant intended to be left may be drawn out with the other. As the Roots of this Plant are but ſlender, ſo they are very difficult to tranſplant; for unleſs a Ball of Earth is preſerved to their Roots, they ſeldom ſurvive their Removal, therefore they muſt be ſeldom tranſplanted from one Pot to another. The Plants muſt conſtantly remain in the Tan Bed in the Stove, and ſhould be treated as other tender Plants of the ſame Country, giving but little Water to them, eſpecially in Winter. When theſe Plants firſt appear, they make conſiderable Progreſs for 2 or 3 Months, after which Time they are at a Stand perhaps a whole Year without ſhooting, being in their Growth very like the Anacardium, or Caſhew Nut, ſo is very difficult to preſerve long in this Country.

HYOSCYAMUS. *Tourn. Inſt. R. H.* 117. *Tab.* 42. *Lin. Gen. Pl.* 219. Henbane; in *French*, *Juſquiame*.

The *Characters* are,

The Flower has a cylindrical Empalement of 1 *Leaf, which is permanent, ſwelling at the Bottom, and cut into* 5 *acute Segments at the Top. It hath* 1 *Funnel-ſhaped Petal, with a ſhort cylindrical Tube, and an erect ſpreading Rim, cut into* 5 *obtuſe Parts,* 1 *being larger than the others; it hath* 5 *inclining Stamina, terminated by roundiſh Summits. In the Center is ſituated a roundiſh Germen, ſupporting a ſlender Style, crowned by a round Stigma. The Germen becomes an oval obtuſe Capſule ſitting in the Empalement, and divided into* 2 *Cells by an intermediate Partition, opening with a Lid at the Top, to let out the many ſmall Seeds which adhere to the Partition.*

The *Species* are,

1. HYOSCYAMUS *foliis amplexicaulibus. Hort. Cliff.* 56. Henbane with Leaves embracing the Stalks. *Hyoſcyamus vulgaris, vel niger. C. B. P.* Common black Henbane.

2. HYOSCYAMUS *foliis petiolatis, floribus pedunculatis terminalibus.* Henbane with Leaves having Foot Stalks, and Flowers with Foot Stalks terminating the Branches. *Hyoſcyamus major, albo ſimilis, umbilico floris atro purpureo. T. Cor.* Great Henbane like the white, but with a dark purple Bottom to the Flower.

3. HYOSCYAMUS *foliis petiolatis, floribus ſeſſilibus. Hort. Upſal.* 56. Henbane with Leaves having Foot Stalks, and Flowers ſitting cloſe to the Branches. *Hyoſcyamus major, albo ſimilis, umbilico floris virenti. Juſſiew.* Greater Henbane like the white, with a green Bottom to the Flower.

4. HYOSCYAMUS *foliis petiolatis, floribus ſolitariis lateralibus.* Henbane with Leaves having Foot Stalks, and Flowers proceeding ſingly from the Sides of the Branches. *Hyoſcyamus minor albo ſimilis, umbilico floris atro purpureo. Tourn. Cor.* 5. Smaller Henbane like the white, with a dark purple Bottom to the Flower.

5. HYOSCYAMUS *foliis lanceolatis infernè pinnato-inciſis ſummis integerrimis.* Henbane with Spear-ſhaped Leaves, the lower being cut into regular Segments, and the upper ones entire. *Hyoſcyamus rubello flore. C. B. P.* Henbane with a rediſh coloured Flower.

6. HYOSCYAMUS *foliis petiolatis acutè dentatis, piſtillo corollâ longiore.* Henbane with acute indented Leaves ſtanding on Foot Stalks, and a Pointal longer than the Petal of the Flower. *Hyoſcyamus Creticus luteus major. C. B. P.* Greater yellow Henbane of *Candia*.

7. HYOSCYAMUS *foliis lanceolatis ſubdentatis, calycibus ſpinoſis. Hort. Upſal.* 44. Henbane with Spear-ſhaped Leaves ſomewhat indented, and a prickly Empalement. *Hyoſcyamus puſillus aureus Americanus, antirrhini foliis glabris. Pluk. Alm.* 188. *Tab.* 37. *fol.* 5. Low golden *American* Henbane, with a ſmooth Snapdragon Leaf.

The 1ſt of theſe Sorts is very common in *England*, growing upon the Sides of Banks and old Dunghills almoſt every where. It is a biennial Plant with long fleſhy Roots, which ſtrike deep into the Ground, ſending out ſeveral large ſoft Leaves, deeply ſlaſhed on their Edges; they ſpread on the Ground; the following Spring the Stalks come out, which riſe about two Feet high, and are garniſhed with Leaves of the ſame Shape, but ſmaller, which embrace the Stalks with their Baſe; the upper Part of the Stalk is garniſhed with Flowers ſtanding on one Side in a double Row, ſitting cloſe to the Stalks alternately; theſe are of a dark purpliſh Colour with a black Bottom, and are ſucceeded by roundiſh Capſules, ſitting within the Empalement; theſe open with a Lid at the Top, and have 2 Cells filled with ſmall irregular Seeds. This is a very poiſonous Plant, and ſhould be rooted out in all Places where Children are ſuffered to come; for in the Year 1729, there were three Children poiſoned with eating the Seeds of this Plant, near *Tottenham Court*; two of which ſlept two Days and two Nights before they could be awakened, and were with Difficulty recovered; but the third being older and ſtronger, eſcaped better.

The Roots of this Plant are uſed for anodyne Necklaces to hang about Children's Necks, being cut to Pieces and ſtrung like Beads, to prevent Fits and cauſe an eaſy Breeding of the Teeth, but they are very dangerous to uſe inwardly. For ſome Years paſt there was a Mixture of theſe Roots brought over with Gentian, and uſed as ſuch, which was attended with very bad Effects, as hath been mentioned under the Article *Gentian*.

The 2d Sort grows naturally in the Iſlands of the *Archipelago*. This Sort hath rounder Leaves, which are obtuſely ſinuated on their Borders, and ſtand on long Foot Stalks; the Stalks branch more than thoſe of the firſt, and the Flowers grow in Cluſters at the End of the Branches, ſtanding on ſhort Foot Stalks; they are of a pale yellow Colour, with very dark purple Bottoms.

The 3d Sort is much like the 2d, but the Flowers are in cloſer Bunches, ſitting very cloſe on the Ends of the Branches; they are of a greeniſh yellow Colour, with green Bottoms. It grows naturally in the warm Parts of *Europe*, and is the Sort whoſe Seeds ſhould be uſed in Medicine, being the white Henbane of the Shops.

The 4th Sort was brought from the *Levant* by Dr. *Tournefort*. This hath a ſmaller Stalk than either of the former, whoſe Joints are farther diſtant; the Leaves are roundiſh, and deeply indented in obtuſe Segments, ſtanding on pretty long Foot Stalks; the Flowers come out ſingly from the Side of the Stalks, at a good Diſtance from each other, they are of a yellow Colour with dark Bottoms.

The 5th Sort grows naturally in *Syria*; this riſes with a branching Stalk 2 Feet high, garniſhed with long Spear-ſhaped Leaves ſitting cloſe to the Stalk; the lower Leaves are regularly cut on both Sides into acute Segments which are oppoſite, ſo are ſhaped like the winged Leaves, but the upper Leaves are entire; the Flowers grow at the End of the Stalks in cloſe Bunches, they are of a worn out red Colour, and ſhaped like thoſe of the common Sort.

All theſe are biennial Plants, which periſh ſoon after they have perfected their Seeds. They flower in *June* and *July*, and their Seeds ripen in Autumn, which, if permitted to ſcatter, will produce Plenty of Plants the following Spring; or if their Seeds are ſown at that Seaſon, they will ſucceed much better than in the Spring; for when they are ſown in Spring, the Plants ſeldom come up the ſame Year. They are all hardy, and require no other Culture but to keep them clean from Weeds, and thin the Plants where they are too cloſe. The 5th Sort ſhould have a warm Situation and a dry Soil, in which it will ſtand much better through the Winter than in rich Ground.

The 6th Sort grows naturally in *Candia*; this is a perennial Plant, with weak Stalks which require Support; the Leaves are roundiſh, and acutely indented on their Edges, ſtanding on pretty long Foot Stalks; the Flowers come out at each Joint of the Stalk, they are large, of a bright yellow with a dark purple Bottom; the Style of this Sort is much longer than the Petal. It flowers moſt Part of Summer, and ſometimes ripens Seeds in the Autumn. If theſe Seeds are ſown in Pots, as ſoon as they are ripe, and placed under a hot Bed Frame in Winter, the Plants will come up in the Spring; but if they are kept out of the Ground till Spring, they rarely ſucceed. This Sort will continue ſeveral Years, if kept in Pots and ſheltered in Winter, for they will not live in the open Air at that Seaſon, but only require to be protected from Froſt; therefore if theſe Plants are placed under a common hot Bed in Winter, where they may enjoy as much free Air as poſſible in mild Weather, they will thrive better than when more tenderly treated. This Sort may be eaſily propagated by Cuttings, which, if planted in a ſhady Border during any of the Summer Months, will take Root in a Month or ſix Weeks, and may be afterward planted in Pots, and treated like the old Plants.

HYPECOUM. *Tourn. Inſt. R. H.* 230. *Tab.* 115. *Hypecoum*; *Lin. Gen. Pl.* 157. We have no *Engliſh* Name for this Plant.

The *Characters* are,

The Empalement of the Flower is compoſed of 2 ſmall oval Leaves, which are oppoſite and erect. The Flower hath 4 Petals, the 2 outer which are oppoſite, are broad, and divided into 3 obtuſe Lobes; the 2 other which are alternate, are cut into 3 Parts at their Points. It hath 4 Stamina ſituated between the Petals, terminated by oblong Summits. In the Center is placed an oblong cylindrical Germen, ſupporting 2 ſhort Styles, crowned by acute Stigmas. The Germen becomes a long compreſſed jointed Pod which is incurved, with 1 roundiſh compreſſed Seed in each Joint.

The *Species* are,

1. Hypecoum *ſiliquis arcuatis compreſſis articulatis. Hort. Upſ.* 31. *Hypecoum*, with compreſſed jointed Pods bent inward. *Hypecoum latiore folio. Tourn.* Broad leaved *Hypecoum*.

2. Hypecoum *ſiliquis cernuis teretibus cylindricis. Hort. Upſ.* 31. *Hypecoum* with taper, cylindrical, nodding Pods. *Hypecoum tenuiore folio. Tourn.* Narrow leaved *Hypecoum*.

3. Hypecoum *ſiliquis erectis teretibus toruloſis. Hort. Upſ.* 32. *Hypecoum* with taper, erect, wreathed Pods. *Hypecoum ſiliquis erectis teretibus. Amm. Ruth.* 58. *Hypecoum* with erect taper Pods.

The 1ſt Sort hath many Wing-pointed Leaves of a grayiſh Colour, which ſpread near the Ground, and ſlender branching Stalks, which proſtrate on the Ground; theſe are naked below, and at Top are garniſhed with 2 or 3 ſmall Leaves of the ſame Shape and Colour with the under ones; from between theſe Leaves come out the Foot Stalks of the Flower, each ſuſtaining 1 yellow Flower with 4 Petals, and a Pointal ſtretched out beyond the Petals, which afterward turns to a jointed compreſſed Pod about 3 Inches long, which bends inward like a Bow, having one roundiſh compreſſed Seed in each Joint. This flowers in *June* and *July*, and the Seeds ripen in *Auguſt*.

The 2d Sort hath ſlender Stalks which ſtand more erect, and the Segments of the Leaves are longer and much narrower than thoſe of the firſt; the Flowers are ſmaller, and come out at the Diviſion of the Branches; theſe are ſucceeded by narrow taper Pods, which hang downward. It flowers and ſeeds at the ſame Time with the firſt.

The 3d Sort grows in the Eaſt; Dr. *Amman* received the Seeds from *Dauria*, and I received the Seeds from *Iſtria*, where it was found growing naturally. This hath much the Appearance of the 2d Sort in Leaf and Flower, but the Pods grow erect and are wreathed and twiſted about. It flowers and ſeeds at the ſame Time with the others.

Theſe Plants are all of them annual, ſo their Seeds ſhould be ſown the Beginning of *March*, on a Bed of light freſh Earth where they are to remain, for they ſeldom ſucceed if tranſplanted. When the Plants are come up, they ſhould be carefully cleared from Weeds; and where the Plants are too cloſe, they muſt be thinned, leaving them about 6 or 8 Inches apart; after this they will require no other Culture, but to keep them conſtantly clear from Weeds. In *June* theſe Plants will flower, and their Seeds will be ripe in *Auguſt*.

Sometimes when the Spring proves very dry, the Seeds will not grow the firſt Year; but if the Ground is kept clear from Weeds and not diſturbed, the Plants will come up the following Spring. I have known the Seeds of theſe Plants remain in the Ground 2 Years, and the Plants have come up the third Spring very well; ſo that it may be very proper to ſow ſome of their Seeds in Autumn, ſoon after they are ripe, in a warm Border, where they may come up early the following Spring; and theſe will be ſtronger, and more likely to perfect Seeds, than thoſe ſown in Spring, by which Method the Kinds may be preſerved.

If the Seeds are permitted to ſcatter, the Plants will come up the following Spring, without any Care; and if they are treated as the others, they will thrive equally; but when the Seeds are ſown in Spring, they ſhould be taken out of the Pods, and diveſted of their fungous Covering, which adheres cloſe to them, ſo prevents their growing, till that is rotted and decayed.

Theſe Plants are ſeldom propagated but by thoſe who are curious in Botany, though for Variety they may have a Place in large Gardens, becauſe they require very little Trouble to cultivate them; and as they take up but little Room, they may be intermixed with other ſmall annual Plants in large Borders, where they will make a pretty Appearance.

The Juice of theſe Plants is of a yellow Colour, reſembling that of Celandine, and is affirmed by ſome eminent Phyſicians to have the ſame Effect as Opium.

HYPERICUM. *Tourn. Inſt. R. H.* 254. *Tab.* 131. *Lin. Gen. Pl.* 808. St. John's wort; in *French*, *Millepertuis*.

The *Characters* are,

The Flower has a permanent Empalement, divided into 5 oval concave Segments; it hath 5 oblong oval Petals which ſpread open, and a great Number of hairy Stamina, joined at their Baſe in 5 diſtinct Bodies, terminated by ſmall Summits. It hath in the Center a roundiſh Germen, ſupporting 1, 3, or 5 Styles, the ſame Length of the Stamina, crowned by ſingle Stigmas. The Germen becomes a roundiſh Capſule, having the ſame Number of Cells as there are Styles in the Flower, filled with oblong Seeds.

The *Species* are,

1. HYPERICUM *floribus trigynis, caule ancipiti, foliis obtuſis pellucido-punctatis. Hort. Cliff.* 380. St. Johnſwort with 3 Styles to the Flower, and obtuſe Leaves having pellucid Punctures. *Hypericum vulgare. C. B. P.* 279. Common St. Johnſwort.

2. HYPERICUM *floribus trigynis, caule quadrato herbaceo. Hort. Cliff.* 380. St. Johnſwort with 3 Styles to the Flowers, and a ſquare herbaceous Stalk. *Hypericum Aſcyron dictum, caule quadrangulo. J. B.* 3. p. 382. St. Johnſwort with a ſquare Stalk, commonly called St. Peterſwort.

3. HYPERICUM *floribus trigynis, ſtaminibus corollâ longioribus, caule fruticoſo ancipiti. Hort. Cliff.* 331. St. Johnſwort with 3 Styles to the Flower, Stamina longer than the Petals, and a ſhrubby Stalk looking two Ways. *Hypericum fœtidum fruteſcens. Tourn.* 255. Stinking ſhrubby St. Johnſwort.

4. HYPERICUM *floribus trigynis, calycibus obtuſis, ſtaminibus corollâ longioribus caule fruticoſo.* St. Johnſwort with 3 Styles to the Flower, obtuſe Empalements, Stamina longer than the Petals, and a ſhrubby Stalk. *Hypericum fruteſcens Canarienſe multiflorum. Hort. Amſt.* 2. p. 135. Shrubby St. Johnſwort from the *Canaries*, having many Flowers.

5. HYPERICUM *floribus trigynis, calycibus acutis, ſtaminibus corollâ brevioribus, caule fruticoſo. Hort. Cliff.* 380. St. Johnſwort with 3 Styles to the Flower, acute Empalements, Stamina ſhorter than the Petals, and a ſhrubby Stalk. *Hypericum Orientale, flore magno. T. Cor.* 19. Eaſtern St. Johnſwort, with a large Flower.

6. HYPERICUM *floribus trigynis, calycibus obtuſis, ſtaminibus corollâ longioribus, capſulis coloratis, caule fruticoſo.* St. Johnſwort with 3 Styles to the Flower, obtuſe Empalements, Stamina longer than the Petals, coloured Seed Veſſels, and a ſhrubby Stalk. *Hypericum Orientale, fœtido ſimile, ſed inodorum. Tourn. Cor.* 19. *Eaſtern* St. Johnſwort, like the ſtinking Kind, but without Smell.

7. HYPERICUM *floribus pentagynis, caule tetragono herbaceo ſimplici, foliis lævibus integerrimis. Hort. Upſal.* 236. St. Johnſwort with 5 Styles to the Flower, a ſquare ſingle herbaceous Stalk, and ſmooth entire Leaves. *Aſcyrum magno flore. C. B. P.* 280. Tutſan with a large Flower.

8. HYPERICUM *floribus pentagynis, caule fruticoſo, foliis ramiſque Cicatriſatis. Lin. Sp. Pl.* 783. St. Johnſwort with 5 Styles to the Flower, a ſhrubby Stalk, and ſcarified Leaves and Branches. *Aſcyron Balearicum, fruteſcens, maximo flore luteo, foliis minoribus, ſubtus verrucoſis ſalvad. Boerh. Ind. alt.* 1. 242. Shrubby Balearick St. Peterſwort with a large yellow Flower, and ſmaller Leaves warted on their under Side.

9. HYPERICUM *floribus trigynis, fructu baccato, caule fruticoſo ancipiti. Hort. Upſal.* 237. St. Johnſwort with 3 Styles to the Flower, a fleſhy Seed Veſſel, and a ſhrubby Stalk looking two Ways. *Androſæmum maximum fruteſcens. C. B. P.* 280. Common Tutſan, or Park Leaves.

10. HYPERICUM *floribus pentagynis, calycibus obtuſis, ſtaminibus corollâ æquantibus, caule erecto herbaceo.* St. Johnſwort with 5 Styles to the Flower, obtuſe Empalements, Stamina equalling the Petals, and an erect herbaceous Stalk.

11. HYPERICUM *floribus monogynis, ſtaminibus corollâ longioribus, calycibus coloratis, caule fruticoſo.* St. Johnſwort with one Style to the Flowers, Stamina longer than the Petals, coloured Empalements, and a ſhrubby Stalk.

There are ſeveral other Species of this Genus, preſerved in Botanick Gardens for Variety, but as they are ſeldom admitted into other Gardens, I have not enumerated them here.

The 1ſt and 2d Sorts are both very common Plants, in the Fields in moſt Parts of *England*; the firſt is uſed in Medicine, but the ſecond is of no Uſe; theſe are rarely propagated in Gardens, but I chooſe to mention them, in order to introduce the other Sorts, which deſerve a Place in every good Garden.

The 1ſt Sort hath a perennial Root, from which ariſe ſeveral round Stalks a Foot and a Half high, dividing into many ſmall Branches, garniſhed at each Joint with 2 ſmall oblong Leaves, ſtanding oppoſite, without Foot Stalks; the Branches alſo come out oppoſite. The Leaves have many pellucid Spots in them, which appear like ſo many Holes, when held up againſt the Light. The Flowers are numerous on the Tops of the Branches, ſtanding on ſlender Foot Stalks, they are compoſed of 5 oval Petals, of a yellow Colour, with a great Number of Stamina, not quite ſo long as the Petals, terminated by roundiſh Summits. In the Center is ſituated a roundiſh Germen, ſupporting 3 Styles, crowned by ſingle Stigmas. The Germen afterward becomes an oblong angular Capſule, with 3 Cells, filled with ſmall brown Seeds. It flowers in *June* and *July*, and the Seeds ripen in Autumn. The Root is perennial, ſo will continue many Years, and if the Seeds are permitted to ſcatter, the Plants will come up in too great Plenty, ſo as to be very troubleſome Weeds. The Leaves and Flowers of this are uſed in Medicine; it is eſteemed an excellent vulnerary Plant, and of great Service in Wounds, Bruiſes, and Contuſions; there is a compound Oil made from this Plant, of great Uſe in the foregoing Accidents. From the Stamina of the Flower is expreſſed a red Juice, which is ſometimes uſed in Colouring, but fades very ſoon.

The 2d Sort hath ſquare Stalks, which riſe about the ſame Height with the firſt, but do not branch ſo much. The Leaves are ſhorter and broader than thoſe of the firſt, and have no pellucid Spots. The Flowers ſit on ſhort Foot Stalks at the End of the Branches, which are ſhaped like thoſe of the other. This flowers and ſeeds the ſame Time with the other, and will propagate in as great Plenty if the Seeds are permitted to ſcatter.

The 3d Sort grows naturally in *Sicily*, *Spain*, and *Portugal*; this riſes with ſhrubby Stalks about 3 Feet high, ſending out ſmall Branches at each Joint oppoſite, garniſhed with oblong oval Leaves, placed by Pairs, ſitting cloſe to the Stalks. The Flowers are produced in Cluſters at the End of the Branches, they are compoſed of 5 oval yellow Petals, with a great Number of Stamina, longer than the Petals, and 3 Styles longer than the Stamina. The Germen which ſupports theſe, afterward becomes an oval Capſule with 3 Cells, filled with ſmall Seeds. It flowers in *June* and *July*, and the Seeds ripen in Autumn.

The 4th Sort grows naturally in the *Canary Iſlands*, ſo was formerly preſerved in Green-houſes during the Winter Seaſon, but is found to be hardy enough to reſiſt the greateſt Cold of this Country, ſo is now cultivated in the Nurſeries as a flowering Shrub; this riſes with a ſhrubby Stalk, 6 or 7 Feet high, dividing into Branches upward, garniſhed with oblong Leaves ſet by Pairs cloſe to the Branches. The Flowers are produced at the End of the Stalks in Cluſters, and are very like thoſe of the former Sort, having a great Number of Stamina, longer than the Petals; this flowers the ſame Time with the former, and perfects its Seeds in Autumn. Both theſe Plants have a very ſtrong Odour like that of a Goat, ſo that where the Plants grow in large Quantities, the Scent is carried by the Wind to a great Diſtance, or if the Leaves are handled, they emit the ſame Odour.

Theſe 2 Sorts are propagated by Suckers, which are plentifully ſent forth from the old Plants. The beſt Seaſon for taking off theſe Suckers is in *March*, juſt before they begin to ſhoot; they ſhould be planted in a light dry Soil, in which they will endure the ſevereſt Cold of our Climate very well. They may alſo be propagated by Cuttings, which ſhould be planted at the ſame Seaſon; or by Seeds which muſt be ſown in *Auguſt* or *September*, which is as ſoon as they are ripe, for if they are kept till Spring, few of them will grow; but as they multiply ſo faſt by Suckers, the other Methods of propagating them are ſeldom practiſed in *England*.

The 5th Sort grows naturally on Mount *Olympus*, where it was diſcovered by Sir *George Wheeler*, who ſent the Seeds to the *Oxford* Garden; this riſes with many upright ligneous Stalks, about a Foot high, garniſhed with ſmall Spear-ſhaped Leaves ſitting cloſe to the Stalks by Pairs oppoſite. The Flowers are produced at the Top of the Stalks, 3 or 4 together, they are compoſed of 5 oblong Petals, of a bright yellow Colour, with a great Number of Stamina, of unequal Lengths, ſome being longer, and others ſhorter than the Petals, terminated by ſmall roundiſh Summits. In the Center is ſituated an oval Germen, ſupporting 3 ſlender Styles, longer than the Stamina. The Germen becomes an oval Capſule with 3 Cells filled with ſmall Seeds. This flowers in *July* and *Auguſt*, and in warm Seaſons ripens its Seeds in Autumn.

This Plant is uſually propagated by parting the Roots, becauſe the Seeds do not always ripen in this Country; the beſt Time for doing this is in *September*, that the Plants may have Time to get Root before Winter; this Sort will live in the open Air, if planted in a warm Situation and a dry Soil, but it will be proper to keep a Plant or two in Pots, to be ſheltered under a Frame in Winter, leſt in very ſevere Winters, thoſe in the open Air ſhould be deſtroyed. If this is propagated by Seeds, they ſhould be ſown ſoon after they are ripe, in Pots filled with light Earth, and placed under a Frame in the Winter, to ſhelter them from Froſt, and in Spring the Plants will appear; when theſe are fit to remove, ſome of them may be planted in a warm Border, and others into Pots, and treated as the old Plants.

The 6th Sort riſes with a ſhrubby Stalk 7 or 8 Feet high, with a reddiſh Bark, and ſends out upward many ſmaller Branches; theſe are garniſhed with oval Heart-ſhaped Leaves, whoſe Baſe ſits cloſe to the Stalks, they are placed by Pairs oppoſite. The Flowers are produced at the End of the Stalks in Cluſters, they are ſmaller than thoſe of the third Sort, and have obtuſe Empalements. The Stamina are longer than the Petals, and are of a deeper Colour. The Flowers are ſucceeded by conical Capſules of a purpliſh red Colour, having 3 Cells, filled with ſmall Seeds. It flowers in *May*, *June*, and *July*, and the Seeds ripen in Autumn. This is now propagated in the Nurſeries as a flowering Shrub, and may be treated as the third and 4th Sorts.

The 7th Sort was firſt brought to *England* from *Conſtantinople*, but has long been very common in the *Engliſh* Gardens, for the Roots ſpread and increaſe very faſt, where it is permitted to ſtand long unremoved. The Stalks are ſlender, and incline downward, they are garniſhed with oval, Spear-ſhaped, ſmooth Leaves, placed by Pairs, ſitting cloſe to the Stalks. The Flowers are produced at the End of the Stalks; theſe are very large, and of a bright yellow Colour, with a great Number of Stamina, which ſtand beyond the Petals; there are 5 Styles in each Flower, of the ſame Length with the Stamina. The Flowers are ſucceeded by pyramidal Seed Veſſels with 5 Cells, containing many ſmall Seeds. It flowers in *June* and *July*.

This Plant is eaſily propagated by parting the Root; the beſt Time for this is in *October*, that the Plants may be well eſtabliſhed before the Drought of Spring, otherwiſe they will not produce many Flowers. As this will grow under Trees, it is a very proper Plant to place under Shrubs and Trees to cover the Ground, where they will make a good Appearance during their Seaſon of flowering.

The 8th Sort grows naturally in the Iſland of *Minorca*, from whence the Seeds were ſent to *England*, by Mr. *Salvador*, an Apothecary at *Barcelona*, in the Year, 1718; this riſes with a ſlender ſhrubby Stalk, about 2 Feet high, ſending out ſeveral weak Branches of a reddiſh Colour, marked where the Leaves have fallen off with a Cicatrice. The Leaves are ſmall, oval, and waved on their Edges, having ſeveral ſmall Protuberances on their under Side; theſe ſit cloſe to the Stalks, half embracing them with their Baſe. The Flowers are produced at the Top of the Stalks, they are large, of a bright yellow Colour, with a great Number of Stamina, a little ſhorter than the Petals; theſe Flowers have 5 Styles, and are ſucceeded by pyramidal Capſules with 5 Cells, which have a ſtrong Smell of Turpentine, and are filled with ſmall brown Seeds; this Plant has a Succeſſion of Flowers great Part of the Year, which renders it valuable; it is too tender to live through the Winter in the open Air in *England*, but requires no artificial Heat; if the Plants are placed in a dry airy Glaſs Caſe in Winter, where they may be protected from Froſt, and enjoy a good Share of freſh Air in mild Weather, they will thrive better than in a warmer Situation; but they muſt not be in a damp Air, for their Shoots ſoon grow mouldy and decay with Damp, nor ſhould the Plants have much Water during the Winter, but in Summer they ſhould be expoſed in the open Air, and in warm Weather they ſhould be gently watered 3 Times a Week; they ſhould have a looſe ſandy Soil, not over rich. This is propagated by Cuttings, which ſhould be planted in *June*, in Pots filled with light Earth, and plunged into a hot Bed, whoſe Heat is declining, ſhading them from the Sun in the Heat of the Day, and now and then refreſhing them with Water; theſe Cuttings, ſo managed, will put out Roots in 6 or 7 Weeks, when they ſhould be carefully taken up, and each planted into a ſeparate ſmall Pot, placing them in the Shade till they have taken new Root, and then they may be removed to a ſheltered Situation, where they may remain till the Froſt comes, then they ſhould be removed into Shelter.

If theſe are propagated by Seeds, they ſhould be ſown in Autumn, as before directed for the fifth Sort, and the Plants treated in the ſame Manner as thoſe raiſed from Cuttings.

The 9th Sort is the common Tutſan, or Park Leaves, ſometimes uſed in Medicine. It grows naturally in Woods in ſeveral Parts of *England*, ſo is not often admitted into Gardens; this hath a ſhrubby Stalk, which riſes 2 Feet high, ſending out ſome ſmall Branches toward the Top; theſe, and alſo the Stalks are garniſhed with oval Heart-ſhaped Leaves, ſitting cloſe to them with their Baſe, they are placed oppoſite by Pairs at every Joint. The Flowers are produced in ſmall Cluſters at the End of the Stalk; theſe are yellow, but ſmaller than either of the Sorts here mentioned, they have many long Stamina, which ſtand out beyond the Flower, and 3 Styles. The Germen afterward turns to a roundiſh Fruit, covered with a moiſt Pulp, which, when ripe, is black. The Capſule has 3 Cells, containing ſmall Seeds. It flowers in *June*, and the Seeds are ripe in Autumn. It hath a perennial Root, and may be propagated by parting it in Autumn; it loves Shade, and a ſtrong Soil.

The 10th Sort grows naturally in *North America*; this riſes with an upright herbaceous Stalk, 3 Feet high, ſending out ſeveral ſmall Branches upward, which come out by Pairs oppoſite, and are garniſhed with oblong Leaves, placed oppoſite, which half embrace the Stalk with their Baſe. At the End of each Stalk is produced one pretty large yellow Flower, with an obtuſe Empalement, having many Stamina, equal in Length with the Petals, and 5 Styles ſo cloſely joined as to appear but one. The Stigmas are reflexed, which denote their Number. This Sort ſeldom ripens Seeds here, ſo is propagated by parting the Roots. The beſt Time for this is in Autumn; it ſhould have a light Soil, and an open Situation. The Flowers appear the latter End of *July*, and in *Auguſt*.

The 11th Sort grows naturally in *China*, from whence the Seeds were brought to the Right Hon. the Earl of *Northumberland*, and the Plants raiſed in his Lordſhip's curious Garden at *Stanwick*, and by his Generoſity, the *Chelſea* Garden was furniſhed with this Plant.

The Root of this Plant is compoſed of many ligneous Fibres, which ſtrike deep in the Ground, from which ariſe ſeveral ſhrubby Stalks, near 2 Feet high, covered with a purpliſh Bark, and garniſhed with ſtiff ſmooth Leaves, about 2 Inches long, and a Quarter of an Inch broad, placed by Pairs oppoſite, ſitting cloſe to the Stalk, they are of a lucid green on their upper Side, and gray on their under, having many tranſverſe Veins running from the Mid-rib to the Border. The Flowers are produced at the Top of the Stalks, growing in ſmall Cluſters, each ſtanding on a ſhort diſtinct Foot Stalk; theſe have an Empalement of 1 Leaf, divided into 5 obtuſe Segments, almoſt to the Bottom, which is of a deep purple Colour. The Flower is compoſed of 5 large obtuſe Petals of a bright yellow Colour; theſe are concave, and in the Center is ſituated an oval Germen ſupporting a ſingle Style, crowned by 5 ſlender Stigmas, which bend on one Side; the Style is attended by a great Number of Stamina, longer than the Petals, and terminated by roundiſh Summits.

This Plant continues in flower great Part of the Year, which renders it the more valuable, and if it is planted in a very warm Situation, it will live in the open Air, but thoſe Plants which ſtand abroad will not flower in Winter, as thoſe do which are removed into Shelter in Autumn.

It may be propagated by Slips from the Root, or by laying down the Branches; if by Slips, they ſhould be planted in Spring on a moderate hot Bed, which will forward their putting out new Roots; the Layers ſhould alſo be laid down at the ſame Time, which will have taken Root by Autumn, when they may be tranſplanted into Pots, and ſheltered under a Frame in Winter, and in the Spring, Part of theſe may be planted in a warm Border, and the others continued in Pots to be ſcreened in Winter, leſt thoſe in the open Air ſhould be killed.

HYPERICUM FRUTEX. *See* Spiræa.

HYPOPHYLLOSPERMOUS PLANTS, are ſuch Plants as bear their Seeds on the Backſides of their Leaves.

HYSSOPUS. *Tourn. Inſt. R. H.* 200. *Tab.* 95. *Lin. Gen. Pl.* 628. Hyſſop; in *French*, *Hiſope*.

The *Characters* are,

The Empalement of the Flower is oblong, cylindrical, ſtreaked, and permanent. It is of 1 *Leaf, cut into* 5 *acute Parts at the Top. The Flower is of* 1 *Petal, of the grinning Kind, with a narrow cylindrical Tube, the Length of the Empalement. The Chaps are inclining. The upper Lip is ſhort, plain, roundiſh, erect, and indented at the Top. The under Lip is trifid, the* 2 *Side Segments being ſhorter than the Middle one, which is crenated. It hath* 4 *Stamina, which ſtand apart,* 2 *of them are longer than the Petal, the other* 2 *ſhorter, terminated by ſingle Summits. It hath* 4 *Germina with a ſingle Style ſituated under the upper Lip, crowned by a bifid Stigma. The Germina afterward become ſo many oval Seeds ſitting in the Empalement.*

The *Species* are,

1. Hyssopus *ſpicis fecundis. Hort. Cliff.* 304. Hyſſop with fruitful Spikes. *Hyſſopus officinarum cærulea ſeu ſpicata. C. B. P.* 217. Hyſſop of the Shops with blue Spikes, or the common Hyſſop.

2. Hyssopus *ſpicis brevioribus, verticillis compactis.* Hyſſop with ſhorter Spikes, and Whorls more compact. *Hyſſopus rubro flore, C. B. P.* 217. Hyſſop with a red Flower.

3. Hyssopus *ſpicis longiſſimis, verticillis diſtantibus.* Hyſſop with the longeſt Spikes, and Whorls at a greater Diſtance. *Hyſſopus verticillis florum rarioribus. Houſt.* Hyſſop with the Whorls of Flowers thinly ranged.

4. Hyssopus *caule acuto quadrangulo. Hort. Upſal.* 163. Hyſſop with an acute ſquare Stalk. *Sideritis Canadenſis altiſſima, ſcrophulariæ folio, flore flaveſcente. Tourn. Inſt.* 192. Talleſt *Canada* Ironwort with a Figwort Leaf, and a yellowiſh Flower.

5. Hyssopus *corollis tranſverſalibus, ſtaminibus inferioribus corollâ brevioribus. Hort. Upſal.* 162. Hyſſop with tranſverſe Petals, and the lower Stamina ſhorter than the Petal. *Nepeta floribus obliquis. Dill.* Cat Mint with oblique Flowers.

The 1ſt Sort, which is the only one cultivated for Uſe, grows a Foot and a Half high. The Stalks are firſt ſquare, but afterward become round, their lower Parts are garniſhed with ſmall Spear-ſhaped Leaves, placed oppoſite, without Foot Stalks, and 7 or 8 very narrow erect Leaves (or Bracteæ) riſing from the ſame Joint. The upper Part of the Stalk is garniſhed with Whorls of Flowers, the lower ones ſtanding half an Inch apart, but the upper are almoſt joined together. The upper Lip of the Flower is indented at the Top, and the under is cut into 3 Parts, the Middle being deeply indented at the Point. There are 4 Stamina in each Flower, which ſpread a Diſtance from each other, the 2 upper are the ſhorteſt, which are ſituated on each Side the upper Lip; the 2 longer ſtand cloſe to the two Side Segments, they are terminated by twin Summits. At the Bottom of the Tube are ſituated 4 naked Germina ſupporting a ſlender Style, ſitting cloſe to the upper Lip, crowned by a bifid Stigma; theſe Germina become 4 oblong black Seeds, ſitting in the Empalement. The whole Plant has a ſtrong aromatick Scent. It flowers in *July* and *Auguſt*, and the Seeds ripen in *September*, but the Roots will abide many Years; it grows naturally in the *Levant*. There is a Variety of this with white Flowers, but doth not differ from the blue in any other Particular.

The 2d Sort doth not grow ſo tall as the firſt; the Stalks branch more, and the Spikes of Flowers are much ſhorter. The Whorls are cloſer together, and have long narrow Leaves ſituated under each. The Flowers are of a fine red Colour, and appear at the ſame Time with the former. This Sort is not quite ſo hardy as the common; for in 1739, the Plants were all deſtroyed by the Cold; this is certainly a diſtinct Species, for I cultivated it from Seeds 20 Years, and never obſerved it to vary.

The 3d Sort grows much taller than either of the other. The Leaves are narrower, the Whorls of Flowers farther aſunder, the Spikes of Flowers much longer, the Flowers larger, and of a deeper blue than thoſe of the common Sort, and the Plant hath not ſo ſtrong an Odour. It flowers at the ſame Time as the firſt.

Theſe 3 Sorts of Hyſſop are propagated either by Seeds or Cuttings; if by the Seeds, they muſt be ſown in *March*, on a Bed of light ſandy Soil, and when the Plants come up, they ſhould be tranſplanted out to the Places where they are to remain, placing them at leaſt a Foot aſunder each Way; but if they are deſigned to abide in thoſe Places for a long Time, 2 Feet Diſtance will be ſmall enough, for they grow pretty large, eſpecially if not frequently cut, to keep them within Compaſs; they thrive beſt on a poor dry Soil, in which Situation they will endure the Cold of our Climate better than when planted on a richer Soil. If you would propagate them by Cuttings, they ſhould be planted in *April* or *May*, in a Border where they may be defended from the violent Heat of the Sun, and being frequently watered, they will take Root in about 2 Months, after which, they may be tranſplanted where they are to continue; managing them as before directed for the ſeedling Plants.

The 1ſt Sort was formerly more cultivated than at preſent in *England*, it being the Sort commonly uſed in Medicine. The other Species are preſerved in curious Gardens for Variety, but they are ſeldom cultivated for Uſe.

They are very hardy Plants, which will endure the Cold of our Winters in the open Air, provided they are planted in a dry undunged Soil, for when planted in a rich Soil, they grow very luxuriant in Summer, and are leſs able to reſiſt the Cold in Winter; ſo that when any of theſe Plants grow out of the Joints of old Walls (as they frequently do,) they will reſiſt the moſt ſevere Froſt, and will be much more aromatick, than thoſe which grow in a rich Soil.

The 4th Sort grows naturally in *North America*; this hath a perennial Root, and an annual Stalk, which decays in Autumn. It riſes with an upright ſquare Stalk, near 4 Feet high, garniſhed with oblique Heart-ſhaped Leaves, ſawed on their Edges, and end in acute Points; they are placed by Pairs oppoſite on ſhort Foot Stalks. The Flowers grow in cloſe thick Spikes, 4 or 5 Inches long at the Top of the Stalks. The upper Lip is divided into 2 roundiſh Segments, the lower one is divided into 3 Parts, the 2 Side Segments ſtanding erect, and the middle one is reflexed, and acutely ſawed at the End. The 2 upper Stamina, which are ſituated on each

Side the upper Lip are the longeſt, the other two ſhorter join the two ſide Segments of the lower Lip; they are terminated by ſmall Summits. The Germina are ſituated at the Bottom of the Tube, having a ſlender Style under the upper Lip, crowned by a bifid Stigma. The Germina become 4 oblong brown Seeds, ſitting in the tubulous Empalement. This Sort flowers in *July*, and the Seeds ripen in *September*.

There is a Variety of this Sort with purple Stalks, and purpliſh Flowers. The Leaves ſtand on longer Foot Stalks, and the Spikes of Flowers are thicker, but I cannot ſay if it is a diſtinct Species, or only a Variety. It grows naturally in the ſame Country with the other. It is titled, *Betonica maxima, folio ſcrophulariæ, floribus incarnatis*, by *Herman. Par. Bat.* 106.

The 5th Sort grows naturally in *Siberia*. The Seeds were ſent me from the Imperial Garden at *Peterſburgh*, by the Title of *Lophanthus*, and afterward I received ſome from *Holland*, which were titled, *Nepeta floribus obliquis. Dill.* This is a perennial Plant with a ſtrong fibrous Root, ſending out many ſquare Stalks, which divide into ſmaller Branches, garniſhed with oblong Leaves, crenated on their Edges, ſet on by Pairs oppoſite. The Flowers are produced at each Joint in ſmall Cluſters, 2 Foot Stalks ariſing from the Baſe of the Leaves, about half an Inch long, both inclining to one Side of the Stalk; each of theſe Foot Stalks divide again into 2 ſmaller, and theſe do each ſupport a Cluſter of 4 or 5 Flowers, which have ſwelling tubulous Empalements, cut into 5 acute Segments at the Top. The Tube of the Petal is longer than the Empalement. The Lips of the Flower are oblique to it, being ſituated horizontally. The 2 upper Stamina, and the Style, ſtand out beyond the Petal, but the other are ſhorter. The Flowers are blue, and appear in *June* and *July*, and the Seeds ripen in *September*.

Both theſe Sorts are very hardy, and may be eaſily propagated by Seeds, which ſhould be ſown in Autumn, for thoſe ſown in the Spring do often lie a Year in the Ground before they vegetate; when the Plants come up, they muſt be kept clean from Weeds, and thinned where they are too cloſe. The following Autumn they ſhould be tranſplanted where they are to remain, and the Plants will flower in Summer, and produce Seeds, but the Roots will abide ſome Years.

It hath been a great Diſpute amongſt modern Writers, whether the Hyſſop now commonly known is the ſame mentioned in Scripture; about which there is great Room to doubt, there being very little Grounds to aſcertain that Plant, though it is moſt generally thought to be the Winter Savory, which Plant is now in great Requeſt amongſt the Inhabitants of the Eaſtern Countries, for outward Waſhings or Purification.

J.

JACEA. *See* Centaurea.

JACOBÆA. *See* Senecio *and* Othonna.

JALAPA. *See* Mirabilis.

JASIONE. *Lin. Gen. Pl.* 896. This is the *Rapunculus ſcabioſæ capitulo cæruleo. C. B. P.* 22. Rampions with Scabious Heads. This Plant grows naturally on ſterile Ground, in moſt Parts of *England*, and is rarely admitted into Gardens.

JASMINOIDES. *See* Ceſtrum *and* Lycium.

JASMINUM. *Tourn. Inſt. R. H.* 597. *Tab.* 368. *Lin. Gen. Pl.* 17. [This Name is *Arabick*.] The Jaſmine, or Jeſſamine Tree; in *French*, *Jaſmin*.

The *Characters* are,

The Flower hath a tubulous Empalement of 1 *Leaf, which is permanent, and cut into* 5 *Segments at the Brim, which are erect. The Flower is of* 1 *Petal, having a long cylindrical Tube, cut into* 5 *Segments at the Top, which ſpread open. It hath* 2 *ſhort Stamina, terminated by ſmall Summits, and ſituated within the Tube of the Petal. In the Center is ſituated a roundiſh Germen, ſupporting a ſlender Style, crowned by a bifid Stigma. The Germen turns to an oval Berry, with a ſoft Skin incloſing* 2 *Seeds, flat on thoſe Sides which join, and convex on the other.*

The *Species* are,

1. JASMINUM *foliis oppoſitis pinnatis, foliolis acuminatis.* Jaſmine with winged Leaves placed oppoſite, whoſe Lobes end in acute Points. *Jaſminum vulgatius, flore albo. C. B. P.* 397. The common white Jaſmine.

2. JASMINUM *foliis alternis ternatis pinnatiſque, ramis angulatis. Hort. Upſal.* 5. Jaſmine with trifoliate and winged Leaves placed alternate, and angular Branches. *Jaſminum humile luteum. C. B. P.* 397. Dwarf yellow Jaſmine, commonly called, The *Italian* yellow Jaſmine.

3. JASMINUM *foliis alternis ternatis ſimplicibuſque, ramis angulatis. Hort. Cliff.* 5. Jaſmine with trifoliate and ſingle Leaves placed alternate, and angular Branches. *Jaſminum luteum, vulgò dictum bacciferum. C. B. P.* 398. The common yellow Jaſmine.

4. JASMINUM *foliis oppoſitis pinnatis, foliolis brevioribus obtuſis.* Jaſmine with winged Leaves placed oppoſite, whoſe Lobes are ſhorter and obtuſe. *Jaſminum humilius, magno flore. C. B. P.* 398. The *Spaniſh* white, or *Catalonian* Jaſmine with a larger Flower.

5. JASMINUM *foliis alternis ternatis, foliolis ovatis, ramis teretibus.* Jaſmine with trifoliate Leaves placed alternate, whoſe Lobes are oval, and taper Branches. *Jaſminum Indicum flavum odoratiſſimum. Fer. Flor.* The ſweet ſcented yellow *Indian* Jaſmine.

6. JASMINUM *foliis oppoſitis ternatis, foliolis cordato-acuminatis.* Jaſmine with trifoliate Leaves placed oppoſite, whoſe Lobes are Heart-ſhaped and pointed. *Jaſminum Azoricum trifoliatum, flore albo, odoratiſſimum. H. A.* The three leaved *Azorian* Jaſmine, with very ſweet white Flowers, commonly called, The Ivy leaved Jaſmine.

7. JASMINUM *foliis lanceolatis oppoſitis integerrimis, calycibus acutioribus.* Jaſmine with Spear-ſhaped Leaves placed oppoſite, and entire, and acute Empalements to the Flower.

The 1ſt Sort is the common white Jaſmine, ſo generally known, as to need no Deſcription. This grows naturally at *Malabar*, and in ſeveral Parts of *India*, yet has been long inured to our Climate, ſo as to thrive and flower extremely well, but never produces any Fruit in *England*; this hath weak trailing Branches, ſo requires the Aſſiſtance of a Wall or Pale to ſupport them. It is eaſily propagated by laying down the Branches, which will take Root in one Year, and may then be cut from the old Plant, and planted where they are deſigned to remain: It may alſo be propagated by Cuttings, which ſhould be planted early in the Autumn, and if the Winter ſhould prove ſevere, the Surface of the Ground between them ſhould be covered with Tan, Sea Coal Aſhes, or Saw Duſt, which will prevent the Froſt from penetrating deep into the Gronnd, and thereby preſerve the Cuttings; or where theſe are wanting, ſome Peas Haulm, or other light Covering ſhould be laid over the Cuttings in hard Froſt; but theſe muſt be removed when the Weather is mild, for they will keep off the Air and occaſion Damps, which often deſtroy them.

When theſe Plants are removed, they ſhould be planted where they are deſigned to be continued, which ſhould be either againſt ſome Wall, Pale, or other Fence, where the flexible Branches may be ſupported; for although it is ſometimes planted as a Standard, and formed into a Head, yet it will be very difficult to keep it in any handſome Order; or if you do, you muſt cut off all the flowering Branches; for the Flowers are always produced at the Extremity of the ſame Year's Shoots, which, if ſhortened before the Flowers are blown, will entirely deprive the Trees of Flowers. Theſe Plants ſhould be permitted to grow rude in the Summer, for the Reaſon before given; nor ſhould you prune and nail them until the Middle or latter End of *March*, when the froſty Weather is paſt; for if it ſhould prove ſharp froſty Weather after their rude Branches are pruned off, and the ſtrong ones are expoſed thereto, they are very often deſtroyed; and this Plant being very backward in ſhooting, there will be no Danger of hurting them by late pruning.

There are 2 Varieties of this with variegated Leaves, one with white, and the other yellow Stripes, but the latter is the moſt common: Theſe are propagated by budding them on the plain Jaſmine, and it often happens, that the Buds do not take, but yet they have communicated their gilded Miaſma to the Plants; ſo that in a ſhort Time after, many of the Branches, both above and below the Places where the Buds have been inſerted have been thoroughly tinctured, and the following Year I have often found very diſtant Branches, which had no other Communication with thoſe which were budded than by the Root, as compleatly tinged as any any of the nearer Branches, ſo that the Juices muſt have deſcended into the Root.

The 2 ſtriped Sorts ſhould be planted in a warm Situation, eſpecially the white ſtriped; for they are much more tender than the plain, and are very ſubject to be deſtroyed by great Froſts, if expoſed thereto; therefore the white ſtriped ſhould be planted to a South or South-weſt Aſpect, and in very ſevere Winters their Branches ſhould be covered with Mats or Straw, to prevent their being killed: The yellow ſtriped is not ſo tender, ſo may be planted againſt Walls to Eaſt or Weſt Aſpects; but theſe Plants with variegated Leaves, are not ſo much in Eſteem as formerly.

The 2d Sort is frequently called, *Italian* yellow Jaſmine by the Gardeners, the Plants being annually brought from thence, by thoſe who come over with Orange Trees. Theſe Plants are generally grafted on the common yellow Jaſmine Stocks, ſo that if the Graft decays, the Plants are of no Value. This Sort is ſomewhat tenderer than the common, yet will it endure the Cold of our ordinary Winters, if planted in a warm Situation. The Flowers of this Kind are generally larger than thoſe of the common yellow Sort, but have very little Scent, and are ſeldom produced ſo early in the Seaſon. It may be propagated by laying down the tender Branches, as was directed for the common white Sort; or by budding or inarching it upon the common yellow Jaſmine, the latter of which is preferable, as making the Plants hardier than thoſe which are obtained from Layers: They ſhould be planted againſt a warm Wall, and in very ſevere Winters will require to be ſheltered with Mats, or ſome other Covering, otherwiſe they are ſubject to be deſtroyed. The Manner of Dreſſing and Pruning being the ſame as was directed for the white Jaſmine, I ſhall not repeat it.

The 3d Sort was formerly more cultivated in the Gardens than at preſent, for as the Flowers have no Scent, ſo few Perſons regard them. This hath weak angular Branches which require Support, and will riſe to the Height of 8 or 10 Feet, if planted againſt a Wall or Pale; but the Plants do often produce a great Number of Suckers from their Roots, whereby they become troubleſome in the Borders of the Pleaſure Garden; and as they cannot be kept in any Order as Standards, ſo there are few of the Plants at preſent introdnced into Gardens. It is eaſily propagated by Suckers or Layers.

The 4th Sort grows naturally in *India*, and alſo in the Iſland of *Tobago*, where the Woods are full of it; the late Mr. *Robert Millar* ſent me over a great Quantity of it from thence. This hath much ſtronger Branches than the common white Sort, the Leaves are winged, and are compoſed of 3 Pair of ſhort obtuſe Lobes, terminated by an odd one, ending in an acute Point; theſe Lobes are placed cloſer than thoſe of the common Jaſmine, and are of a lighter green; the Flowers come out from the Wings of the Stalks, ſtanding on Foot Stalks 2 Inches long, each ſuſtaining 3 or 4 Flowers, of a bluſh red on their Outſide, but white within; the Tube of the Flower is longer, the Segments are obtuſe, twiſted at the Mouth of the Tube, and are of a much thicker Texture than thoſe of the common Sort, ſo that there is no Doubt of its being a diſtinct Species; and the Reaſon for Dr. *Linnæus*'s ſuppoſing it to be ſo, was by Miſtake; for as theſe Plants are generally grafted on Stocks of the common Jaſmine, there are always Shoots coming out from the Stocks of that Sort, which, if permitted to ſtand will produce Flowers; and theſe do often ſtarve and kill the Grafts, ſo that there will be only the common Sort left; and this has been the Caſe with ſome Plants which he examined, therefore ſuppoſed the Difference of the other Sort was wholly owing to Culture; whereas if he had only obſerved the Difference of their Leaves, he would have certainly made two diſtinct Species of them.

This Plant is propagated by budding or inarching it upon the common white Jaſmine, on which it takes very well, and is rendered hardier than thoſe which are on their own Stocks. But thoſe of this Kind being brought over from *Italy* every Spring in ſo great Plenty, they are ſeldom raiſed here: I ſhall therefore proceed to the Management of ſuch Plants as are uſually brought into *England* from the Place above-mentioned, which are generally tied up in ſmall Bunches, containing four Plants, and their Roots wrapped about with Moſs, to preſerve them from drying; which, if it happen that the Ship has a long Paſſage, will often occaſion them to puſh out ſtrong Shoots from their Roots, which muſt always be taken off before they are planted, otherwiſe they will exhauſt the whole Nouriſhment of the Plant, and deſtroy the Graft.

In making Choice of theſe Plants, you ſhould carefully obſerve if their Grafts are alive, and in good Health: For if they are brown and ſhrunk they will not puſh out, ſo that there will be only the Stock left, which is of the common Sort.

When you receive theſe Plants, you muſt clear the Roots of the Moſs, and all decayed Branches ſhould be taken off; then place their Roots into a Pot or Tub of Water, which ſhould be ſet in the Green-houſe, or ſome other Room, where it may be ſcreened from the Cold; in this Situation they may continue 2 Days, after which you muſt prune off all the dry Roots, and cut down the Branches within 4 Inches of the Place where they are grafted, and Plant them into Pots filled with freſh light Earth; then plunge the Pots into a moderate hot Bed of Tanners Bark, obſerving to water and ſhade them, as the Heat of the Seaſon may require. In about 3 Weeks or a Month's Time they will begin to ſhoot, when you muſt carefully rub off all ſuch as are produced from the Stock below the Graft; and you muſt now let them have a great Share of Air, by raiſing the Glaſſes in the Heat of the Day; and as the Shoots extend, they ſhould be topped, to ſtrengthen them, and by Degrees, ſhould be hardened to endure the open Air, into which they ſhould be removed in *June*, but muſt have a warm Situation the firſt Summer; for if they are too much expoſed to the Winds, they will make but indifferent Progreſs, being rendered ſomewhat tender by the hot Bed. If the Summer proves warm, and the Trees have ſucceeded well, they will produce ſome Flowers in the Autumn following, though they will be few in Number, and not near ſo ſtrong as they will be the ſucceeding Years, when the Trees are ſtronger and have better Roots.

Theſe Plants are commonly preſerved in Green-houſes, with Oranges, Myrtles, *&c.* and during the Winter Seaſon, will require to be frequently watered, which ſhould be performed ſparingly each Time, eſpecially in cold Weather, for too much Wet at that Seaſon will be apt to rot the Fibres of their Root; they ſhould alſo have a great Share of freſh Air when the Weather will permit, for which Purpoſe they ſhould be placed in the cooleſt Part of the Green-houſe, among Plants that are hardy, where the Windows may be opened every Day, except in froſty Weather; nor ſhould they be crowded too cloſe among other Plants, which often occaſions the tender Parts of their Shoots to grow mouldy and decay. In *April* the Shoots of theſe Plants ſhould be ſhortened down to 4 Eyes, and all the weak Branches ſhould be cut off; and if you have the Conveniency of a Glaſs Stove, or a deep Frame, to place the Pots in at that Seaſon, to draw them out again, it will be of great Service in forwarding their flowering; yet ſtill you ſhould be careful not to force them too much: And as ſoon as they have made Shoots 3 or 4 Inches long, the Glaſſes ſhould be opened in the Day Time, that the Plants may, by Degrees, be inured to the open Air, into which they ſhould be removed by the latter End of *May* or the Beginning of *June*, otherwiſe their Flowers will not be ſo fair, nor continue ſo long. If the Autumn proves favourable, theſe Plants will continue to produce freſh Flowers until *Michaelmas*; and ſometimes when they are ſtrong, they will continue flowering till *November*, or after; but then they muſt have a great ſhare of Air when the Weather is mild and will admit of it, otherwiſe the Flower Buds will grow mouldy and decay.

But notwithſtanding moſt People preſerve theſe Plants in Green-houſes, yet they will endure the Cold of our ordinary Winters in the open Air, if planted againſt a warm Wall, and covered with Mats in froſty Weather; they will alſo produce ten Times as many Flowers in one Seaſon as thoſe kept in Pots, and the Flowers will likewiſe be much larger; but they ſhould not be planted abroad till they have ſome Strength, ſo that it will be neceſſary to keep them in Pots 2 or 3 Years, whereby they may be ſheltered from the Froſt in Winter; and when they are planted againſt the Wall, which ſhould be in *May*, that they may take good Root in the Ground before the ſucceeding Winter, you muſt turn them out of the Pots, preſerving the Earth to their Roots; and having made Holes in the Border where they are to be planted, you ſhould place them therein, with their Stems cloſe to the Wall; then fill up the Holes round their Roots with good freſh rich Earth, and give them ſome Water to ſettle the Ground about them, and nail up their Shoots to the Wall, ſhortening ſuch of them as are very long, that they may puſh out new Shoots below to furniſh the Wall, continuing to nail up all the Shoots as they are produced. In the Middle, or toward the latter End of *July*, they will begin to flower, and continue to produce new Flowers until the Froſt prevents them; which when you obſerve, you ſhould carefully cut off all the Tops of ſuch Shoots as have Buds formed upon them, as alſo thoſe which have the Remains of faded Flowers left; for if theſe are ſuffered to remain on, they will ſoon grow mouldy, eſpecially when the Trees are covered, and thereby infect many of the tender Branches, which will greatly injure the Trees.

Toward the Middle of *November*, if the Weather be cold and the Nights froſty, you muſt begin to cover your Trees with Mats, which ſhould be nailed over them pretty cloſe; but this ſhould be done when the Trees are perfectly dry, otherwiſe the Wet being lodged upon the Branches, will often cauſe a Mouldineſs upon them, and the Air being excluded therefrom, will rot them in a ſhort Time: It will alſo be very neceſſary to take off theſe Mats as ſoon as the Weather will permit, to prevent this Mouldineſs, and only keep them cloſe covered in froſty Weather; at which Time you ſhould alſo lay ſome Mulch upon the Surface of the Ground, about their Roots, and faſten ſome Bands of Hay about their Stems, to guard them from the Froſt; and in very ſevere Weather, you ſhould add a double or treble Covering of Mats over the Trees; by which Method, carefully performed, you may preſerve them through the hardeſt Winters. In the Spring, as the Weather is warmer, you ſhould by Degrees take off the Covering; but you ſhould be careful not to expoſe them too ſoon to the open Air, as alſo to guard them againſt the Morning Froſts and dry eaſterly Winds, which often reign in *March*, to the no ſmall Deſtruction of tender Plants, if they are expoſed thereto; nor ſhould you quite remove your Covering until the Middle of *April*, when the Seaſon is ſettled, at which Time you ſhould prune the Trees, cutting out all decayed and weak Branches, ſhortening the ſtrong ones to about 2 Feet long, which will cauſe them to ſhoot ſtrong, and produce many Flowers.

There is a Variety of this with ſemi-double Flowers, which is at preſent very rare in *England*, and only to be found in ſome very curious Gardens; though in *Italy* it is pretty common, from whence it is ſometimes brought over amongſt the ſingle; the Flowers of this Kind have only 2 Rows of Leaves, ſo that it is rather regarded for its Curioſity, than for any extraordinary Beauty in the Flowers. This may be propagated by budding it on the common white Jaſmine, as hath been directed for the ſingle, and muſt be treated in the ſame Manner.

The 5th Sort grows naturally in *India*; this riſes with an upright woody Stalk 8 or 10 Feet high, covered with a brown Bark, and ſending out ſeveral Branches which want no ſupport; theſe are cloſely garniſhed with trifoliate Leaves of a lucid green, which are placed alternate on the Branches; the two Side Lobes of theſe Leaves which grow oppoſite, are much leſs than the end one; they are oval and entire, continuing green all the Year: The Flowers are produced at the End of the Shoots in Bunches, which have long ſlender Tubes, and are divided at the Top into 5 obtuſe Segments which ſpread open; theſe Flowers are of a bright yellow, and have a moſt grateful Odour. They come out in *July*, *Auguſt*, *September*, and *October*, and ſometimes continue to the End of *November*; they are frequently ſucceeded by oblong oval Berries, which turn black when ripe, and have each two Seeds.

This Sort of Jaſmine is propagated either by Seeds, or laying down their tender Branches; if you would propagate them by Seeds, which they often produce in *England*, you ſhould make a moderate hot Bed in the Spring, into which you ſhould plunge ſome ſmall Pots, filled with freſh light Earth; and in a Day or two after when you find the Earth in the Pots warm, you muſt put the Seeds therein; about 4 in each Pot will be ſufficient, covering them about an Inch thick with the ſame light Earth, and obſerve to refreſh the Pots with Water as often as you ſhall perceive the Earth dry; but do not give them too much at each Time, which would be apt to rot the Seeds.

In about 6 or 8 Weeks after ſowing, the Plants will appear above Ground, at which Time it will be neceſſary to remove the Pots into another freſh hot Bed, of a moderate Temperature, in order to bring the Plants forward; you muſt alſo be careful to water them as often as is neceſſary, and in the great Heat of the Day the Glaſſes ſhould be tilted pretty high, and ſhaded with Mats to prevent the Plants from being ſcorched with Heat. About the Middle of *May* you ſhould begin to harden them to the open Air, by taking off the Glaſſes when the Weather is warm; but this muſt be done cautiouſly, for you ſhould not expoſe them to the open Sun in a very hot Day at firſt, which would greatly injure them; but rather take off the Glaſſes in warm cloudy Weather at firſt, or in gentle Showers of Rain, and ſo by Degrees inure them to bear the Sun; and in *June* you ſhould take the Pots out of the hot Bed, and carry them to ſome well ſheltered Situation, where they may remain until the Beginning of *October*; at which Time they muſt be carried into the Green-houſe, obſerving to place them where they may enjoy as much free Air as poſſible when the Windows are opened, as alſo to be clear from the Branches of other Plants.

During the Winter Seaſon they will require to be often watered, but you muſt be careful not to give them too much at each Time; and in *March* you muſt remove theſe Plants each into a ſeparate Pot, being careful not to take the Earth from their Roots; and if, at this Time, you plunge them into a freſh moderate hot Bed, it will greatly faciliate their rooting again, and be of great Service to the Plants; but when they are rooted, you muſt give them a great deal of Air; for if you draw them too much, they will become weak in their Stems, and incapable to ſupport their Heads, which is a great Defect in theſe Trees.

You muſt alſo harden them to the open Air, into which they ſhould be removed about the Middle of *May*, obſerving, as was before directed, to place them in a Situation that is defended from ſtrong Winds, which are injurious to theſe Plants, eſpecially while they are young. In Winter houſe them as before, and continue the ſame Care, with which they will thrive very faſt, and produce annually great Quantities of Flowers.

Theſe Plants are pretty hardy, and will require no other Care in Winter, than only to defend them from hard Froſts; nor do I know whether they would not live in the open Air, which ſhould be tried by planting ſome againſt a warm Wall for that Purpoſe; and I think we have little Reaſon to doubt of the Succeſs, ſince they are much hardier than the *Spaniſh*; but there is this Difference between them, *viz.* theſe Plants have large, thick, ever-green Leaves, ſo that if they were covered with Mats, as was directed for the *Spaniſh* Jaſmine, the Leaves would rot and decay the Shoots; but as theſe will only require to be covered in extreme Froſt, ſo if their Roots are well mulched, and a Mat or two looſely hung over them in ordinary Froſts, it will be ſufficient; and theſe Mats being either rolled up, or taken quite off in the Day, there will no great Danger of their being hurt, which only can proceed from being too long cloſe covered.

In Spring theſe ſhould be pruned, when you ſhould cut off all decayed Branches; but you muſt not ſhorten

ten any of the other Branches, as was directed for the *Spaniſh* Sort, for the Flowers of this Kind are produced only at the Extremity of the Branches, which, if ſhortened, would be cut off; and theſe growing of a more ligneous Subſtance than the other, will not produce Shoots ſtrong enough to flower the ſame Year.

If you would propagate this Plant from Layers, the Shoots ſhould be laid down in *March*; and if you give them a little Cut at the Joint, as is practiſed in laying Carnations, it will promote their rooting: You ſhould always obſerve to refreſh them often with Water, when the Weather is dry; which if carefully attended to, the Plants will be rooted by the ſucceeding Spring, fit to be tranſplanted, when they muſt be planted in Pots filled with light Earth, and managed as was before directed for the Seedling Plants.

This Sort is frequently propagated, by inarching the young Shoots into Stocks of the common yellow Jaſmine, but the Plants ſo raiſed do not grow ſo ſtrong as thoſe on their own Stock, ; beſides, the common yellow Jaſmine is very apt to ſend out a great Number of Suckers from the Root, which renders the Plants unſightly; and if theſe Suckers are not conſtantly taken off, as they are produced, they will rob the Plants of their Nouriſhment.

The 6th Sort grows naturally in the *Azores*; this hath long ſlender Branches which require Support, and may be trained 20 Feet high; they are garniſhed with trifoliate Leaves, whoſe Lobes are large and Heart-ſhaped, of a lucid green, and placed oppoſite on the Branches; they continue all the Year. The Flowers are produced at the End of the Branches, in looſe Bunches; they have long narrow Tubes, which at Top are cut into 5 Segments ſpreading open; they are of a clear white, and have a very agreeable Scent. This flowers at the ſame Time with the former, the Gardeners call it frequently the Ivy-leaved Jaſmine.

The *Azorian* Jaſmine is alſo pretty hardy, and requires no more Shelter than only from hard Froſts; and I am apt to think, if this Sort was planted againſt a warm Wall, and managed, as hath been directed for the yellow *Indian* Jaſmine, it would ſucceed very well; for I remember to have ſeen ſome Plants of this Kind growing againſt a Wall in the Gardens at *Hampton-Court*, where they had endured the Winter, and were in a more flouriſhing State than ever I ſaw any of the Kind in Pots, and produced a greater Quantity of Flowers. Theſe Plants are propagated as the yellow *Indian*, and require the ſame Management.

Theſe Plants are as deſerving of a Place in all Green-houſes, as any which are there preſerved; for their Leaves being of a ſhining green, make a good Appearance all the Year; and their Flowers having a fine Scent, and continuing ſo long in Succeſſion, renders them very valuable.

The 7th Sort was brought from the *Cape of Good Hope*, by Capt. *Hutchiſon* of the *Godolphin*, who diſcovered it growing naturally, a few Miles up the Land from the Sea, being drawn to it by the great Fragrancy of its Flowers, which he ſmelt at ſome Diſtance from the Plant, which was then in full flower; and after having viewed the Plant, and remarked the Place of its Growth, he returned thither the following Day with proper Help, and a Tub to put it in, and cauſed it to be carefully taken up, and planted in the Tub with ſome of the Earth on the Spot, and conveyed on Board his Ship, where it continued flowering great Part of the Voyage to *England*, where it arrived in good Health, and has for 3 Years continued flowering, in the curious Garden of *Richard Warner*, Eſq; at *Woodford* in *Eſſex*, who was ſo obliging as to favour me with Branches of this curious Plant in flower, to embelliſh one of the Numbers of my Figures of Plants, where it is repreſented in the 180th Plate.

This Plant ſeems not to have been known to any of the Botaniſts, for I have not met with any Figure or Deſcription of it in any of the Books; there is one Sort which is figured in the *Malabar* Garden, aud alſo in *Burman*'s Plants of *Ceylon*, which approaches near this; it is titled, *Nandi ervatum major. Hort. Mal.* But it differs in this, in having longer and narrower Leaves, and the Tube of the Flower is larger, and the Segments do not ſpread ſo much as this; but it is ſurprizing that this Plant ſhould be unknown to the People at the *Cape of Good Hope*, for there was not one Plant of it in their curious Garden, not could the Captain ſee any other Plant of it but that which he brought away.

The Stem of this Plant is large and woody, ſending out many Branches, which are firſt green, but afterward the Batk becomes gray, and is ſmooth; the Branches come out by Pairs oppoſite, and have ſhort Joints; the Leaves are alſo ſet by Pairs oppoſite, cloſe to the Branches; they are 5 Inches long, and 2 Inches and a Half broad in the Middle, leſſening to both Ends, terminating in a Point; they are of a lucid green, having ſeveral tranſverſe Veins from the Mid-rib to the Borders; they are entire, and of a thick Conſiſtence. The Flowers are produced at the End of the Branches, ſitting cloſe to the Leaves; they have a tubulous Empalement, with 5 Corners or Angles, cut deep at the Brim, into 5 long narrow Segments, ending in acute Points: The Flower hath but 1 Petal, for although it is cut into many deep Segments at the Top, yet theſe are all joined in one Tube below; ſome of theſe Flowers are much more double than others, having 3 or 4 Orders of Petals; theſe, which have ſo many, have only a bifid Stigma; but thoſe which are leſs double, have trifid Stigmas. All thoſe Flowers which I have examined have no Stamina, which may be occaſioned by the Fullneſs of the Flowers, as is often obſerved in many Kinds of Plants, whoſe Flowers have a greater Number of Petals than uſual; and ſome of theſe want both Parts of Generation, but many of them have no male Parts. This Flower, when fully blown, is as large as a middling Roſe, and ſome of them are as double as the Damaſk Roſe; they have a very agreeable Odour; on the firſt Approach it is ſomething like that of the Orange Flower, but when more cloſely ſmelt to, has the Odour of the common double white Narciſſus. The Seaſon of this Plant flowering in *England*, is in *July* and *Auguſt*, but in its native Country it is ſuppoſed to flower great Part of the Year; for Capt. *Hutchinſon*, who brought the Plant over, ſaid there was a Succeſſion of Flowers on it, till the Ship arrived in a cold Climate, which put a Stop to its Growth.

As this Plant is new in *Europe*, and having loſt the

Tops of its Branches by the Cold, after the Ship arrived in the *Britiſh* Channel, there has been little Opportunity of propagating it; but ſome of the Cuttings which have been lately planted, ſeem to preſerve their Verdure ſo well, as to give great Hopes of their putting out Roots; but if theſe ſhould fail, there can be little Doubt of the Layers putting out Roots, nor of their taking upon Stocks of the yellow *Indian* Jaſmine when grafted by Approach, ſo that in a few Years it may be diſperſed into many Gardens. It requires a Stove in Winter, and if it is plunged into the Tan Bed, it will thrive better than in a dry Stove; but it ſhould not be kept too warm, for that will draw the Branches weak, and cauſe the Plants not to produce ſo many Flowers.

JASMINUM ARABICUM. *See* Coffee *and* Nyctanthes.

JASMINUM ILICIS FOLIO. *See* Lantana.

JASMINE, *the* Arabian. *See* Nyctanthes.

JASMINE, *the* Perſian. *See* Syringa.

JATROPHA. *Lin. Gen. Pl.* 961. *Manihot. Tourn. Inſt. R. H.* 658. *Tab.* 438. Caſada, or Caſſava; in *French*, *Caſſave.*

The *Characters* are,

It hath male and female Flowers in the ſame Plant; the male Flowers have a ſcarce viſible Empalement; they are Salver-ſhaped and of 1 *Petal, with a ſhort Tube, whoſe Brim is cut into* 5 *roundiſh Segments which ſpread open; they have* 10 *Awl-ſhaped Stamina,* 5 *being alternately ſhorter than the other; theſe are joined cloſe together, ſtanding erect in the Center of the Flower, and terminated by roundiſh looſe Summits. The female Flowers, which are ſituated in the ſame Umbel, have no Empalement, but have* 5 *Petals ſpread open like a Roſe. In the Center is a roundiſh Germen with* 3 *deep Furrows, ſupporting* 3 *Styles crowned by ſingle Stigmas. The Germen becomes a roundiſh Capſule with* 3 *Cells, each containing* 1 *Seed.*

The *Species* are,

1. JATROPHA *foliis palmatis, lobis lanceolatis integerrimis lævibus. Lin. Sp. Pl.* 1007. *Jatropha* with Hand-ſhaped Leaves, whoſe Lobes are Spear-ſhaped, entire and ſmooth. *Manihot Theveti, juca & caſſavi. J. B.* 2. 794. The *Manihot* of *Thevet*, and the Juca or Caſſava of *John Bauhin.*

2. JATROPHA *foliis quinquelobatis, lobis acuminatis, acutè dentatis lævibus, caule fruticoſo. Jatropha* with Leaves compoſed of 5 ſmooth Lobes ending in Points, ſharply indented on their Edges, and a ſhrubby Stalk. *Juſſievia frutеſcens, non ſpinoſa, foliis glabris & minus laciniatis. Houſt. Mſſ.* Shrubby *Juſſievia* without Spines, and ſmooth Leaves leſs divided.

3. JATROPHA *aculeata, foliis quinquelobatis acutè inciſis, caule herbaceo.* Prickly *Jatropha* with Leaves having 5 Lobes ſharply cut on their Edges, and an herbaceous Stalk. *Juſſievia herbacea, ſpinoſiſſima, urens, foliis digitatis & laciniatis. Houſt. Mſſ.* The moſt prickly ſtinging and herbaceous *Juſſievia*, with fingered Leaves which are jagged.

4. JATROPHA *aculeata, foliis trilobis, caule herbaceo. Lin. Sp. Pl.* 1007. Prickly *Jatropha* with Leaves having 3 Lobes, and an herbaceous Stalk. *Juſſievia herbacea ſpinoſiſſima, urens, foliis trilobatis minimè inciſis. Houſt. Mſſ.* Prickly ſtinging herbaceous *Juſſievia*, with Leaves having 3 Lobes very ſlightly indented.

5. JATROPHA *foliis palmatis dentatis aculeatis. Hort. Cliff.* 445. *Jatropha* with Hand-ſhaped, indented, prickly Leaves. *Manihot ſpinoſiſſima, folio vitigineo. Plum. Cat.* 20. The moſt prickly Caſſava with a Vine Leaf.

6. JATROPHA *foliis lobatis dentatis acuminatis, urentibus, caule arboreo. Jatropha* with lobated Leaves indented, acute, pointed, and ſtinging, and a Tree-like Stalk. *Juſſievia arborea, minùs ſpinoſa, floribus albis umbellatis, foliis aconiti urentibus. Houſt. Mſſ.* Tree *Juſſievia* which is leſs prickly, with white Flowers growing in Umbels, and ſtinging Leaves like thoſe of Wolfsbane.

7. JATROPHA *foliis multipartitis lævibus, ſtipulis ſetaceis multifidis. Hort. Cliff.* 445. *Jatropha* with ſmooth Leaves divided into many Parts, and briſtly Stipulæ with many Points. *Ricinoides arbor Americana, folio multifido.* 656. Tree *American* Baſtard *Ricinus* with a many pointed Leaf, commonly called *French* Phyſick Nut in *America.*

8. JATROPHA *foliis cordatis angulatis. Hort. Cliff.* 445. *Jatropha* with angular Heart-ſhaped Leaves. *Ricinoides Americana goſſypii folio. Tourn. Inſt.* 656. *American* Baſtard *Ricinus* with a Cotton Leaf, commonly called Phyſick Nut in *America.*

9. JATROPHA *foliis quinquepartitis, lobis ovatis integris, ſetis glanduloſis ramoſis. Flor. Leyd. Prod.* 202. *Jatropha* with Leaves divided into 5 Parts, the Lobes oval and entire, and branching Briſtles ariſing from the Glands. *Ricinoides Americana ſtaphyſagriæ folio. Tourn. Inſt.* 656. *American* Baſtard *Ricinus*, with a Staveſacre Leaf, commonly called Belly-ach Weed in *America.*

The 1ſt Sort here mentioned, is the common Caſſada or Caſſava, cultivated for Food in the warm Parts of *America*, where, after the Juice is expreſſed out of the Root (which has a poiſonous Quality) it is ground into a Kind of Flour, and made up in Cakes or Puddings, and is eſteemed a wholeſome Food.

This riſes with a ſhrubby Stalk 6 or 7 Feet high, garniſhed with ſmooth Leaves, ſtanding on long Foot Stalks alternately; they are compoſed of 7 Lobes, joined at their Baſe in one Center, where they are narrow, but increaſe in their Breadth till within an Inch and a Half of the Top, where they diminiſh to an acute Point; the 3 Middle Lobes are about 6 Inches long, and 2 broad in their broadeſt Part; the 2 next are about an Inch ſhorter, and the two Outſide Lobes are not more than 3 Inches long; the middle Lobes are ſinuated on each Side near the Top, but the two outer are entire. The Flowers are produced in Umbels at the Top of the Stalks, theſe are ſome male and others female; they are compoſed of 5 roundiſh Petals which ſpread open; the male Flowers have their 10 Stamina joined together in a Column, and the female Flowers have a roundiſh Germen with 3 Furrows in the Center, ſupporting 3 Styles; 2 are ſeparated at a Diſtance, and the third ariſes between them, but is not ſo long; they are crowned by ſingle Stigmas. The Germen afterward turns to a roundiſh Capſule with 3 Lobes, each having a diſtinct Cell, containing 1 Seed.

The 2d Sort was diſcovered by Dr. *Houſtoun* at the *Havanna*, from whence he ſent the Seeds. This riſes with an upright Stalk, 10 or 12 Feet high, which is firſt green and herbaceous, but afterward becomes ligneous, ſending out a few Branches at the Top, garniſhed with ſmooth Leaves compoſed of 5 oval Lobes, which end in acute Points; the Edges are alſo indented in ſeveral irregular Points, which are acute. The Flowers are produced in an Umbel at the Extremity of the Stalks, they are of an herbaceous white Colour, and male and female in the ſame Umbel, as the other Sort; the Capſule is ſmooth and has 3 Cells, each including a ſingle Seed.

The 3d Sort was diſcovered by the late Dr. *Houſtoun*, growing naturally in the ſandy Grounds about the Town of *La Vera Cruz*, from whence he ſent the Seeds, which ſucceeded in the *Chelſea* Garden. This hath a very thick fleſhy Root, in Shape like the white *Spaniſh* Radiſh; the Stalk riſes from 1 to 2 Feet high, it is taper, herbaceous, and branching, and cloſely armed on every Side, with long white Spines, not very ſtiff, but pungent and ſtinging; the Leaves are divided into 5 Lobes, the Middle being the longeſt; the others are ſhortened, the 2 next being about an Inch ſhorter, but the 2 outer not more than half the Length of the Middle; theſe are deeply jagged on both Sides, and waved on their Edges; all the Veins of the Leaves are cloſely armed with ſtinging Spines, ſo that it is dangerous handling them; for all the intermediate Parts of the Leaves have ſmall ſtinging Spines like thoſe of the Nettle, but they do not appear ſo viſible. At the End of the Branches, the Flowers are produced in Umbels; they are white, and have Empalements cloſely armed with the ſame Spines as the Stalks and Leaves: There are male and female Flowers in the ſame Umbel, the female Flowers are ſucceeded by tricapſular Veſſels, containing 3 Seeds.

The 4th Sort riſes with an herbaceous Stalk about a Foot high, dividing into 2 or 3 Branches, garniſhed with Leaves ſtanding alternate on long Foot Stalks; they are compoſed of 3 oblong Lobes ſlightly ſinuated on their Edges, ending in acute Points; the whole Plant is cloſely armed with long, briſtly, ſtinging Spines. The Flowers grow in an Umbel at the End of the Branches; they are ſmall, of a dirty white Colour, and are male and female in the ſame Umbel: The female Flowers are ſucceeded by oval Capſules with 3 Lobes, covered with the ſame Spines as the Plant; theſe have 3 Cells, each containing a ſingle Seed. This Plant is annual.

The 5th Sort was found growing naturally at *Carthagena* in *New Spain*, by the late Mr. *Robert Millar*, who ſent the Seeds to *England*, which ſucceeded in ſeveral curious Gardens. This hath a thick, ſwelling, fleſhy Root, from which ariſes an herbaceous Stalk as big as a Man's Thumb, 4 or 5 Feet high, and divided into ſeveral Branches; theſe are very cloſely armed with long brown Spines; the Foot Stalks of the Leaves are 6 or 7 Inches long, armed with Spines, but not ſo cloſely, nor are the Spines ſo long as thoſe on the Stalk and Branches; the Leaves are deeply cut into 5 Lobes, jagged deeply on their Sides, and the Nerves are armed with ſtinging Spines; the Flowers are produced in Umbels at the Top of the Branches, ſtanding on long naked Foot Stalks; they are of a pure white Colour, and are male and female in the ſame Umbel: The male Flowers appear firſt, which are compoſed of 5 Petals, forming a ſhort Tube at Bottom, and the Stamina ariſe the Length of the Tube, joined in a Column: The Petals ſpread open flat above, and the Stamina fills the Mouth of the Tube, ſhutting it up: The female Flowers are ſmaller, but of the ſame Shape, having no Stamina, but an oval 3 cornered Germen, which afterward becomes a Capſule with 3 Lobes, each having a diſtinct Cell, with 1 Seed incloſed.

The 6th Sort was diſcovered at *La Vera Cruz*, where it is frequently permitted to grow about the Town by Way of Ornament; this riſes with a ſtrong brittle ligneous Stalk, 10 or 12 Feet high, covered with a gray Bark, and divides into many Branches, garniſhed with Leaves, divided into Parts like thoſe of the common Wolfsbane, but armed with ſmall ſtinging Spines like thoſe of the Nettle; at the End of the Branches come out the Flower Stalks, which are 5 or 6 Inches long, ſuſtaining an Umbel of white Flowers. The male Flowers are of 1 Petal, having a pretty long Tube, divided at the Top into 5 Segments. The female Flowers expand in Form of a Roſe, having the Germen in the Center, which afterward becomes a globular prickly Fruit with 3 Lobes, opening in 3 Cells, each containing a ſingle Seed.

The 7th Sort is now very common in moſt of the Iſlands in the *Weſt-Indies*, but was introduced from the Continent, firſt into the *French* Iſlands, and from thence it was brought into the *Britiſh* Iſlands, where it is titled *French* Phyſick Nut, to diſtinguiſh it from the following Sort, which is called Phyſick Nut, from its purging Quality.

This riſes with a ſoft thick Stem 8 or 10 Feet high, dividing into ſeveral Branches, covered with a grayiſh Bark. The Leaves come out on every Side the Branches, on ſtrong Foot Stalks, 7 or 8 Inches long; they are divided into 9 or 10 Lobes in Form of a Hand, joined at their Baſe; theſe are 7 Inches long, and about 2 broad, with many jagged Points on their Borders ſtanding oppoſite. The upper Sides of the Leaves are of a lucid green, but their under Side gray, and a little cottony. The Flowers come out upon long Foot Stalks from the End of the Branches, formed into an Umbel, in which are male and female Flowers, as in the other Species; theſe Umbels are large, and the Flowers being of a bright Scarlet, make a fine Appearance, and the Leaves being very remarkable for their Beauty, has occaſioned the Plant being cultivated for Ornament in moſt of the Iſlands of the *Weſt-Indies*.

The 8th Sort grows naturally in all the Iſlands of the *Weſt-Indies*; this riſes with a ſtrong Stalk, 12 or 14 Feet high, which divides into ſeveral Branches; garniſhed with angular Heart-ſhaped Leaves, which end in acute Points. The Flowers come out in Umbels at the End of the Branches; they are male and female, of an herbaceous Colour, ſo make but little Appearance; the female Flowers are ſucceeded by oblong oval Capſules with 3 Cells, each containing 1 oblong black Seed.

The Seeds of the 2 laſt Sorts have been uſed as a Purgative by the Inhabitants of the *Weſt-Indies*, but they operate ſo violently, that they are ſeldom uſed; 3 or 4 of theſe Nuts have worked upward and downward near 40 Times, on a Perſon who was ignorant of their Effects; but is affirmed that this purgative Quality is contained in a thin Film, ſituated in the Center of the Nut, which, if taken out, the Nuts are harmleſs, and may be eaten with Safety. The Leaves of the laſt Sort are uſed in Baths and Fomentations.

The 9th Sort grows naturally in all the Iſlands of the *Weſt-Indies*, where it is ſometimes called wild *Caſſada*, or *Caſſava*, and at others Belly-ach Weed; the Leaves of this Plant being accounted a good Remedy for the dry Belly-ach. This Plant riſes with a ſoft herbaceous Stalk, 3 or 4 Feet high, covered with a purple Bark, and at the Joints has branching briſtly Hairs, riſing in ſmall Bunches, not only upon the principal Stalk, but alſo on the Branches, and the Foot Stalks of the Leaves. The Stalk divides upward into 2 or 3 Branches; theſe are garniſhed with Leaves ſtanding on very long Foot Stalks; they are divided into 5 Lobes, which are oval, entire, and end in acute Points. The Flowers are produced at the End of the Branches, on ſlender naked Foot Stalks, in ſmall Umbels; they are of a dark purple Colour, having male and female Flowers in the ſame Umbel; the female Flowers are ſucceeded by oblong tricapſular Veſſels, ſmooth, and covered with a dark Skin, when ripe; in each of the Cells is lodged 1 Seed.

All theſe Plants are Natives of the warm Parts of *America*, ſo are too tender to thrive in the open Air in *England*. The firſt Sort is cultivated in the *Weſt-Indies* for Food, where it is propagated by cutting the Stalks into Lengths of 7 or 8 Inches, which, when planted, put out Roots; the Method of doing this having been mentioned in various Books, I ſhall not repeat it here.

The other Sorts are eaſily propagated by Seeds, which ſhould be ſown in a good hot Bed in the Spring, and when the Plants are fit to remove, they ſhould be each tranſplanted into a ſmall Pot filled with light Earth, and then plunged into a freſh hot Bed of Tanners Bark, carefully ſhading them till they have taken freſh Root, after which they muſt be treated as other tender Plants from hot Countries, admitting freſh Air to them daily, in Proportion to the Warmth of the Seaſon; but as many of the Sorts have ſucculent Stalks, ſome of which have a milky Juice, they ſhould have little Water given them, for they are ſoon deſtroyed by Wet.

The 4th Sort is an annual Plant, ſo if the Seeds are ſown early in the Spring, and the Plants are brought forward, they will perfect their Seeds the ſame Year; but the other Sorts are perennial, ſo do not flower till the ſecond or third Year, therefore the Plants ſhould be plunged into the Tan Bed in the Stove, where they ſhould conſtantly remain, giving them a large Share of Air in warm Weather, but in Winter they muſt be tenderly treated, and then muſt have very little Water. With this Management the Plants will continue ſeveral Years, and produce their Flowers, and frequently perfect their Seeds in *England*.

IBERIS. *Dillen. Nov. Gen.* 6. *Lin. Gen. Pl.* 721. *Thlaſpidium. Tourn. Inſt. R. H.* 214. *Tab.* 101. Sciatica Creſs.

The *Characters* are,

The Flower hath an Empalement of 4 oval Leaves, which ſpread open, are hollowed and fall away. It hath 4 unequal Petals, which are oval, obtuſe, and ſpread open; they have oblong erect Tails, the 2 outer Petals are longer than the other. It hath 6 Awl-ſhaped erect Stamina, the 2 on the Sides being ſhorter than the reſt, terminated by roundiſh Summits. In the Center of the Tube is ſituated a round compreſſed Germen, ſupporting a ſhort ſingle Style, crowned by an obtuſe Stigma. The Germen afterward becomes a roundiſh compreſſed Veſſel, having 2 Cells, each containing 1 oval Seed.

The *Species* are,

1. IBERIS *fruteſcens, foliis cuneiformibus obtuſis integerrimis. Lin. Hort. Cliff.* 330. Shrubby Sciatica Creſs with entire, Wedge-ſhaped, blunt Leaves, commonly called, The Tree Candy Tuft. *Thlaſpidium fruticoſum, leucoii folio, ſemperflorens. Tourn. Inſt.* 214. Shrubby *Thlaſpidium* with a Gilliflower Leaf, always flowering.

2. IBERIS *fruteſcens foliis linearibus acutis integerrimis. Lin. Hort. Cliff.* 330. Shrubby Sciatica Creſs with narrow pointed whole Leaves, commonly called, Perennial Candy Tuft. *Thlaſpi montanum, ſempervirens. C. B. P.* 106. Ever-green Mountain Candy Tuft.

3. IBERIS *foliis lanceolatis acuminatis, inferioribus ſerratis, ſuperioribus integerrimis. Lin. Hort. Cliff.* 330. Sciatica Creſs with Spear-ſhaped pointed Leaves, the under ones being ſawed, but the upper entire, commonly called, Candy Tuft. *Thlaſpi Creticum quibuſdam, flore rubente & albo. J. B.* 2. 924. True *Cretan* Treacle Muſtard with a red and white Flower.

4. IBERIS *foliis linearibus ſupernè dilatatis ſerratis. Flor. Leyd.* 330. Sciatica Creſs with narrow Leaves dilated at their Top, and ſawed. *Thlaſpi umbellatum Creticum, flore albo odoro, minus. C. B. P.* 106. Small umbellated Treacle Muſtard of *Crete* with a white ſweet Flower.

5. IBERIS *foliis ſinuatis, caule nudo ſimplici. Lin. Hort. Cliff.* 328. Sciatica Creſs with ſinuated Leaves, and a ſingle naked Stalk. *Naſturtium petræum. Tab. Ic.* 451. Rock Creſs.

6. IBERIS *foliis lanceolatis acutis ſubdentatis, floribus racemoſis. Lin. Hort. Upſ.* 184. Sciatica Creſs with acute, Spear-ſhaped, indented Leaves, and Flowers growing in Bunches. *Thlaſpi arvenſe umbellatum amarum. J. B.* 2. 925. Bitter umbellated Field Treacle Muſtard.

7. IBERIS *foliis ſubrotundis crenatis. Royen: Lin. Sp. Pl.* 649. *Iberis* with roundiſh crenated Leaves. *Thlaſpi Alpinum, folio rotundiore carnoſo, flore purpuraſcente. Tourn. Inſt.* 212. *Alpine* Treacle Muſtard with a rounder fleſhy Leaf, and a purpliſh Flower.

8. IBERIS *fruteſcens, foliis linearibus acutis, corymbis hemiſphæricis.* Shrubby Sciatica Creſs with narrow acute Leaves, and hemiſpherical Bunches of Flowers. *Thlaſpi Luſitanicum umbellatum, gramineo folio, purpuraſcente flore. Tourn. Inſt. R. H.* 213. *Portugal* umbellated Treacle Muſtard with a Graſs Leaf, and a purpliſh Flower.

The 1ſt Sort here mentioned is a low ſhrubby Plant, which ſeldom riſes above a Foot and Half high, having many ſlender Branches, which ſpread on every Side, and fall to the Ground, if not ſupported. Theſe Branches are well furniſhed with Leaves toward their Extremity, which continue green all the Year; and in Autumn the Flowers are produced at the End of the Shoots, which are white, and grow in an Umbel. Theſe Flowers continue long in Beauty, and are ſucceeded by others, ſo that the Plants are rarely deſtitute of Flowers for near 8 Months, from the End of *October* to the Beginning of *June*, which renders the Plant valuable.

This Plant is ſomewhat tender, therefore is generally preſerved in Green-houſes in Winter, where, being placed among other low Plants toward the Front of the Houſe, it makes an agreeable Variety, as it continues flowering all the Winter. But although it is commonly ſo treated, yet in moderate Winters this Plant will live in the open Air, if it be planted in a warm Situation, and on a dry Soil; and if, in very hard Froſt, they are covered either with Mats, Reeds, Straw, or Peas Haulm, they may be preſerved very well, and theſe Plants which grow in the full Ground, will thrive better, and produce a greater Number of Flowers, than thoſe kept in Pots; but the Soil in which theſe are planted, ſhould not be over rich, nor too wet, for in either of theſe they will grow too vigorous in Summer, ſo will be in greater Danger of ſuffering by the Froſt in Winter; but when they grow on a gravelly Soil, or among Lime Rubbiſh, their Shoots will be ſhort, ſtrong, and not ſo replete with Moiſture, ſo will better reſiſt the Cold.

This Plant very rarely produces Seeds in *England*, therefore is only propagated by Cuttings, which if planted during any of the Summer Months, and ſhaded from the Sun, and duly watered, will be rooted in 2 Months, and may afterward be either planted in Pots, or into the Borders where they are deſigned to ſtand.

There is a Variety of this with variegated Leaves, preſerved in ſome of the Gardens where Perſons delight in theſe ſtriped leaved Plants. This is not ſo hardy as the plain Sort, therefore muſt be treated more tenderly in Winter; this is alſo increaſed by Cuttings as the other.

The 2d Sort is a Plant of humbler Growth than the firſt; this ſeldom riſes more than 6 Inches high, nor do the Branches grow woody, but are rather herbaceous; the Leaves of this Plant continue green through the Year, and the Flowers are of as long Duration as thoſe of the firſt Sort, which renders it valuable. This rarely produces Seeds in *England*, but is propagated by Slips, which, in Summer, eaſily take Root, and the Plants may be treated as the firſt Sort.

The 3d Sort is a low annual Plant, the Seeds of which were formerly ſown to make Edgings for Borders in the Pleaſure Garden, for which Purpoſe all the low annual Flowers are very improper, becauſe they do not anſwer the Intent, which is to prevent the Earth of the Borders falling into the Walks, which theſe Plants never can do; and although they make a pretty Appearance during their Continuation in flower, which is ſeldom more than a Fortnight or three Weeks, yet after their Flowers are paſt, they become very unſightly; therefore all theſe Sorts of Flowers ſhou'd be ſown in ſmall Patches in the Borders of the Flower Garden, where, if they are properly mixed with other Flowers, they will have a very good Effect, and by ſowing them at 3 or 4 different Seaſons, there may be a Succeſſion of them continued in flower till Autumn.

There are 2 different Varieties of this 3d Sort, one with red, and the other hath white Flowers, but the white is not common in the Gardens, but the Seeds of the 6th Sort are generally ſold for it, and is ſeldom diſtinguiſhed but by thoſe who are ſkilled in Botany; this Plant ſeldom riſes more than 5 or 6 Inches high, and if they have Room will branch out on every Side; but when they are left too cloſe, they draw each other up, and are weak; as theſe do not bear tranſplanting well, ſo the Seeds ſhould be ſown thin in Patches, and when the Plants are grown pretty ſtrong, they ſhould be thinned, leaving but 6 or 8 in each Patch to flower, and by thus treating them, they will put out Side Branches, and flower much ſtronger, and continue longer in Beauty than when they are left cloſer together; theſe Plants will require no other Culture but to keep them clean from Weeds.

The 4th Sort ſeldom grows ſo large as the third, and the Flowers are much ſmaller, but have an agreeable Odour. It grows naturally in *Helvetia*, and is preſerved in Botanick Gardens for Variety. It is annual, and requires the ſame Treatment as the third.

The 5th Sort grows on ſandy and rocky Places in ſeveral Parts of *England*, ſo is rarely admitted into Gardens. The Leaves of this are ſmall, and cut to the Mid-rib into many Jags; theſe ſpread on the Ground, and between them ariſes a naked Foot Stalk, 2 or 3 Inches long, ſuſtaining ſmall Umbels of white Flowers. This is an annual Plant, whoſe Seeds ſhould remain, and require no other Care but to keep them clean from Weeds.

The 6th Sort is very like the 3d, but differs in the Shape of the Leaves. The Flowers are white, ſo may be ſown to make a Variety with the red. It requires the ſame Treatment.

The 7th Sort grows naturally on the *Alps*, from whence it was ſent me; this is a perennial Plant, which roots pretty deep in the Ground. The lower Leaves which riſe from the Root, are round, fleſhy, and crenated on their Edges. The Stalk riſes 4 or 5 Inches high, and is garniſhed with ſmall oblong Leaves, which half embrace the Stalks with their Baſe. The Flowers terminate the Stalk in a round compact Umbel; they are of a purple Colour, and appear in *June*, but are ſeldom ſucceeded by Seeds in *England*.

It is propagated by Seeds, which ſhould be ſown on a ſhady Border in Autumn, and when the Plants are ſtrong enough to remove, they ſhould be tranſplanted on a ſhady Border, where they are deſigned to remain, and will require no other Care but to keep them clean from Weeds.

The 8th Sort grows naturally in *Spain* and *Portugal*; this hath a great Reſemblance of the 2d, but the Stalks do not ſpread ſo much; they grow erect, about 7 or 8 Inches high, are ligneous and perennial. The Leaves are very narrow, and ſeldom more than an Inch long, ſtanding thinly on the Stalk, having no Foot Stalks. The Flowers grow in hemiſpherical Umbels on the Top of the Stalks, and are of a purple Colour. It flowers in *May* and *June*, but ſeldom produces good Seeds here.

This Sort may be propagated by Cuttings, which ſhould be treated as the firſt Sort, and ſome of the Plants may be planted on a warm Border in a dry Soil, where they will endure the Cold of our ordinary Winters very well, but it will be proper to have 2 or 3 Plants in Pots, which may be ſheltered under a Frame in Winter, to preſerve the Kind, if, by ſevere Froſt, thoſe in the open Air ſhould be deſtroyed.

IBISCUS. *See* Hibiſcus.

ICACO. *See* Chryſobalanus.

JET D'EAU is a *French* Word, which ſignifies a Fountain that caſts up Water to any conſiderable Height.

Theſe Spouts of Water are ſome of the greateſt Beauties of the *Italian* Gardens, and are certainly better adapted for Gardens in thoſe warm Countries, than they are for our Climate, becauſe, in the great Heats of Summer, the Sight of theſe Water Spouts is cooling and refreſhing to the Imagination, and they certainly add a real Coolneſs to the Air; but in cold Countries they cool the Air too much, therefore ſhould not be erected; or if they are, they ſhould be placed at ſuch Diſtances from the Habitation, that the Damp may no Ways affect it.

ILEX. *Lin. Gen. Pl.* 158. *Aquifolium. Tourn. Inſt. R. H.* 600. *Tab.* 371. The Holly Tree; in *French*, *Houx*.

The *Characters* are,

They have male, female, and hermaphrodite Flowers on different Plants, and often on the ſame Tree. The male Flowers have a ſmall permanent Empalement of 1 *Leaf, indented in* 4 *Parts; they have but* 1 *Petal, cut into* 4 *Segments almoſt to the Bottom; they have* 4 *Awl-ſhaped Stamina, ſhorter than the Petal, and terminated by ſmall Summits. The female Flowers have their Empalements and Petals the ſame as the male, but have no Stamina; in their Center is placed the roundiſh Germen, having* 4 *obtuſe Stigmas ſitting on it. The Germen becomes a roundiſh Berry with* 4 *Cells, each containing a ſingle hard Seed.*

The *Species* are,

1. ILEX *foliis oblongo-ovatis, undulatis, ſpinis acutis.* Holly Tree with oblong oval Leaves which are waved, and have acute Spines. *Ilex aculeata baccifera. C. B. P.* 425. Prickly Berry-bearing *Ilex*; and the *Aquifolium ſive agrifolium vulgò. J. B.* 114. The common Holly.

2. ILEX *foliis ovatis, undulatis, marginibus aculeatis, paginis ſupernè ſpinoſis.* Holly with oval waved Leaves, whoſe Borders are armed with ſtrong Thorns, and their upper Surface prickly. *Aquifolium echinatâ folii ſuperficie. Cornut. Canad.* 180. Holly Tree whoſe upper Surface of the Leaves is prickly, commonly called Hedge-hog Holly.

3. ILEX *foliis ovato-lanceolatis ſerratis. Hort. Cliff.* 40. Holly with oval, Spear-ſhaped, ſawed Leaves. *Aquifolium Carolinienſe, foliis dentatis, baccis rubris. Cateſb. Carol.* 1. p. 31. *Carolina* Holly with indented Leaves and red Berries, commonly called *Dahoon* Holly.

There are ſeveral Varieties of the common Holly with variegated Leaves, propagated by the Nurſery Gardeners for Sale, and ſome Years paſt were in very great Eſteem, but at preſent are but little regarded, the old Taſte of filling Gardens with ſhorn Ever-greens being pretty well aboliſhed; however, in the Diſpoſition of Clumps or other Plantations of ever-green Trees and Shrubs, a few of the moſt lively Colours may be admitted, which will have a good Effect in the Winter Seaſon, if properly diſpoſed. As the different Variegations of the Leaves of Hollies, are by the Nurſery Gardeners diſtinguiſhed by different Titles, I ſhall mention the moſt beautiful of them, by the Names they are generally known.

Painted Lady Holly, Britiſh *Holly*, Bradley's *beſt Holly*, Phyllis, *or Cream Holly, Milkmaid Holly*, Pritchet's *beſt Holly, Gold-edged Hedge-hog Holly*, Cheyney's *Holly, Glory of the Weſt Holly*, Broaderick's *Holly*, Partridge's *Holly*, Herefordſhire *white Holly*, Blind's *Cream Holly*, Longſtaff's *Holly*, Eales's *Holly, Silver-edged Hedge-hog Holly*.

All theſe Varieties are propagated, by budding or grafting them on Stocks of the common green Holly: There is alſo a Variety of the common Holly with ſmooth Leaves, but this is frequently found intermixed with the prickly leaved on the ſame Tree, and often on the ſame Branch, there are both Sorts of Leaves.

The common Holly grows naturally in Woods and Foreſts in many Parts of *England*, where it riſes from 20 to 30 Feet high, and ſometimes more, but their ordinary Height is not above 25 Feet: The Stem by Age becomes large, and is covered with a grayiſh ſmooth Bark; and thoſe Trees which are not lopped or browzed by Cattle, are commonly furniſhed with Branches the greateſt Part of their Length, ſo form a Sort of Cone; the Branches are garniſhed with oblong oval Leaves about 3 Inches long, and one and a Half broad, of a lucid green on their upper Surface, but pale on their under, having a ſtrong Mid-rib. The Edges are indented and waved, with ſharp Thorns terminating each of the Points, ſo that ſome of the Thorns are raiſed upward and others are bent downward, and being very ſtiff, renders them troubleſome to handle. The Leaves are placed alternate on every Side of the Branches, and from the Baſe of their Foot Stalks come out the Flowers in Cluſters, ſtanding on very ſhort Foot Stalks; each of theſe ſuſtain 5 or 6 or more Flowers. In ſome Plants I have obſerved the Flowers were wholly male, and produced no Berries; in others I have obſerved female and hermapdrodite Flowers, but upon ſome large old Trees growing in *Windſor* Foreſt, I have obſerved all three upon the ſame Trees. The Flowers are of a dirty white, and appear in *May*; theſe are ſucceeded by roundiſh Berries, which turn to a beautiful red about *Michaelmas*, but continue on the Trees if they are not deſtroyed, till after *Chriſtmas*, before they fall away.

The 2d Sort grows naturally in *Canada*, from whence it was brought to *Europe*. The Leaves of this Sort are not ſo long as thoſe of the common Holly, and their Edges are armed with ſtronger Thorns ſtanding cloſer together; the upper Surface of the Leaves is ſet very cloſe with ſhort Prickles, from whence the Gardeners have given it the Title of Hedge-hog Holly. This Sort is uſually propagated in the Nurſeries, by budding or grafting it upon the common Holly, but I have raiſed it from the Berries, and found the Plants to be the ſame as thoſe from whence the Seeds were taken, ſo make no Doubt of its being a diſtinct Species.

There are 2 Varieties of this with variegated Leaves, 1 of which is yellow, and the other white. There is alſo a Variety of the common Holly with yellow Berries, which is alſo accidental, and is generally found on thoſe Plants which have variegated Leaves, and but ſeldom on plain Hollies.

The common Holly is a very beautiful Tree in Winter, therefore deſerves a Place in all Plantations of evergreen Trees and Shrubs, where its ſhining Leaves and red Berries make a fine Variety; and if a few of the beſt variegated Kinds are properly intermixed, they will enliven the Scene. The Holly was alſo formerly planted for Hedges, and is a very proper Plant for that Purpoſe, but then it ſhould not be clipped with Shears, becauſe when the Leaves are cut through their Middle, they are rendered unſightly, ſo they ſhould be cut with a Knife cloſe to the Leaf; and although in this Method they are not ſhorn ſo even as with Shears, yet they will have a much better Appearance, and may be made as cloſe and ſecure as by the other Method generally practiſed.

The Holly is propagated by Seeds, which never come up the firſt Year. but lie in the Ground as the Haws do; therefore the Berries ſhould be buried in the Ground one Year, and then taken up and ſown upon a Bed expoſed only to a Morning Sun; the following Spring the Plants will appear, which muſt be kept clean from Weeds; and if the Spring ſhould prove dry, it will be of great Service to the Plants, if they are watered once a Week; but they muſt not have it oftener, nor in too great Quantity, for too much Moiſture is very injurious to theſe Plants when young.

In this Seed-Bed the Plants may remain 2 Years, and then ſhould be tranſplanted in the Autumn, into Beds at about 6 Inches aſunder, where they may ſtand 2 Years longer; during which Time they muſt be conſtantly kept clean from Weeds, and if the Plants have thriven well, they will be ſtrong enough to tranſplant, where they are deſigned to remain; for when they are tranſplanted at that Age, there will be leſs Danger of their failing, and they will grow to a larger Size, than thoſe which are removed when they are much larger; but if the Ground is not ready to receive them at that Time, they ſhould be tranſplanted into a Nurſery in Rows at 2 Feet Diſtance, and 1 Foot aſunder in the Rows, in which Place the Plants may remain 2 Years longer; and if they are deſigned to be grafted or budded with any of the variegated Kinds, that ſhould be performed after the Plants have grown one Year in this Nurſery; but the Plants ſo budded or grafted, ſhould continue 2 Years after in the Nurſery, that they may make good Shoots before they are removed; though the plain ones ſhould not ſtand longer than 2 Years in the Nurſery, becauſe when they are older they do not tranſplant ſo well. The beſt Time for removing Hollies is in the Autumn, eſpecially in dry Land, but where the Soil is cold or moiſt, they may be tranſplanted with great Safety in the Spring; if the Plants are not too old, or have ſtood long unremoved, for if they have it is great Odds of their dying when removed.

The *Daboon* Holly grows naturally in *Carolina*, from whence the Seeds were ſent by the late Mr. *Mark Cateſby*, who found the Trees growing on a Swamp at a Diſtance from *Charles Town*, but it hath ſince been diſcovered in ſome other Countries in *North America*. This riſes with an upright branching Stem to the Height of 18 or 20 Feet; the Bark of the old Stems is of a brown Colour, but that of the Branches or younger Stalks is green and ſmooth, garniſhed with Spear-ſhaped Leaves, more than 4 Inches long, and 1 and a Quarter broad in the broadeſt Part, of a light green and thick Conſiſtence; the upper Part of the Leaves are ſawed on their Edges, each Serrature ending in a ſmall ſharp Spine; they ſtand alternately on every Side the Branches, on very ſhort Foot Stalks. The Flowers come out in thick Cluſters from the Side of the Stalks, they are white, and ſhaped like thoſe of the common Holly, but ſmaller; theſe are ſucceeded by ſmall roundiſh red Berries in its native Country, which make a fine Appearance in Winter, but they have not as yet produced Fruit in *England*, ſo far as I can learn.

Dr. *Linnæus* ſuppoſes this Plant and the ever-green Caſſine to be the ſame, but they are undoubtedly diſtinct Plants: He may probably have been led into this Miſtake, by receiving Seeds of both Sorts mixed together from *America*, which I have more than once done; but whoever ſees the 2 Plants growing, cannot doubt of their being different.

This Sort is tender while young, ſo requires Protection in the Winter till the Plants are grown ſtrong and woody, when they may be planted in the full Ground in a warm Situation, where they will endure the Cold of our ordinary Winters pretty well; but in ſevere Froſt they ſhould be protected, otherwiſe the Cold will deſtroy them.

This is propagated from Seeds, as the common Sort; the Seeds of it will lie as long in the Ground, ſo the Berries ſhould be buried in the Ground a Year, and then taken up and ſown in Pots filled with light Earth, and placed under a Frame in Winter; in the Spring the Pots ſhould be plunged into a hot Bed, which will bring up the Plants; theſe muſt be preſerved in Pots while young, and ſheltered in Winter under a common Frame till they have obtained Strength, when they may be turned out of the Pots and planted in the full Ground, in a warm Situation.

From the Bark of the common Holly is made the Bird Lime, and the Wood is made into Hones for ſetting Razors. The Wood is very white, and takes a fine Poliſh, ſo is very proper for ſeveral Kinds of Furniture. I have ſeen a Floor of a Room laid in Compartments with Holly and Mahogony, which had a very pretty Effect.

IMPATIENS. *Rivin. Ord.* 4. *Lin. Gen. Pl.* 899. *Balſamina. Tourn. Inſt. R. H.* 418. *Tab.* 235. Female Balſamine; in *French*, *Balſaminé*.

The *Characters* are,

The Flower has a 2 leaved ſmall Empalement, coloured and placed on the Side of the Petals. It hath 5 Petals which are unequal, and ſhaped like a Lip Flower; the Petals are roundiſh, the upper is erect, ſlightly cut at the Point into 3 Parts, where it is ſharp pointed, forming the upper Lip; the 2 lower Petals are broad, obtuſe, irregular, and reflexed, theſe conſtitute the lower Lip; the intermediate Pair are alike, and are placed oppoſite, joining at their Baſe. It hath a Nectarium in the Bottom of the Flower, ſhaped like a Hood or Cowl, which is oblique to the Mouth riſing on the Outſide, whoſe Baſe ends in a Tail or Spur. It hath 5 ſhort Stamina narrow toward their Baſe and incurved, terminated by Summits which join at the Top round the Stamina, but divided at their Baſe. In the Bottom is ſituated an oval ſharp pointed Germen, having no Style, but a ſingle Stigma ſhorter than the Summits. The Germen becomes a Capſule with 1. Cell, opening with an Elaſticity in 5 Valves which twiſt ſpirally, and contain ſeveral roundiſh Seeds fixed to a Column.

The *Species* are,

1. IMPATIENS *pedunculis multifloris ſolitariis, foliis*

ovatis, geniculis caulinis tumentibus. Flor. Suec. 722. *Impatiens* with Foot Stalks ſuſtaining many ſingle Flowers, oval Leaves, and Stalks having ſwelling Joints. *Balſamina lutea, ſive, Noli me tangere. C. B. P.* 306. Yellow Balſamine, or, Touch me not.

2. Impatiens *pedunculis unifloris aggregatis, foliis lanceolatis, nectariis flore brevioribus. Hort. Upſ.* 276. *Impatiens* with Foot Stalks ſuſtaining ſingle Flowers, which ariſe in Cluſters, Spear-ſhaped Leaves, and Nectaria ſhorter than the Flower. *Balſamina fœmina. C. B. P.* 306. The female Balſamine.

3. Impatiens *pedunculis trifloris ſolitariis, foliis anguſto-lanceolatis. Flor. Zeyl.* 315. *Impatiens* with 3 Flowers on a Foot Stalk, and narrow Spear-ſhaped Leaves. *Balſamina erecta ſ. fœmina, Perſicæ anguſto folio Zeylanica. Herm. Par. Bat.* 105. Upright or female Balſamine of *Ceylon*, with a narrow Peach Leaf.

There are ſeveral other Species of this Genus, which grow naturally in *India*, that are Plants of little Beauty, ſo have not been introduced into the *Engliſh* Gardens; the Sorts here mentioned, are all I have yet ſeen growing here.

The 1ſt Sort grows naturally in ſeveral Parts of *Weſtmoreland* and *Yorkſhire*, but is frequently introduced into Gardens by Way of Curioſity. It is an annual Plant, which riſes about a Foot high, with an upright ſucculent Stalk whoſe Joints are ſwollen; it is garniſhed with oval ſmooth Leaves, which ſtand alternate on every Side the Stalk. The Flowers come out from the Wings of the Stalks, upon long ſlender Foot Stalks, which branch into ſeveral other ſmaller, each ſuſtaining 1 yellow Flower, compoſed of 5 Petals, which in Front are ſhaped like the Lip or grinning Flowers, but at their Baſe have a long Tail like the Flowers of *Indian* Creſs; theſe are ſucceeded by taper Pods, which, when ripe, burſt open upon being touched, and twiſt ſpirally like a Screw, caſting out the Seeds with great Elaſticity. If the Seeds of this Plant are permitted to ſcatter, they generally ſucceed better than when ſown; for unleſs they are ſown in the Autumn ſoon after they are ripe, they very rarely grow. The Plants require no Care but to keep them clean from Weeds, and thin them where too cloſe. It flowers in *June*, and the Seeds ripen about a Month or 5 Weeks after; this delights in a ſhady Situation and a moiſt Soil.

The 2d Sort is the female Balſamine, of which there are ſeveral Varieties; the common Sort has been long an Inhabitant in the *Engliſh* Gardens, of this there is the white, the red, and ſtriped flowered, and likewiſe the ſingle and double flowering. Theſe Sorts are ſo hardy as to riſe in the full Ground, and where the Seeds ſcatter, the Plants will come up the following Spring, but theſe do not come to flower ſo early as thoſe raiſed upon a hot Bed; however, they generally are ſtronger Plants, and continue much longer in the Autumn in flower than the others, ſo are an Ornament to the Garden, when there is a greater Scarcity of Flowers.

This Sort riſes a Foot and a Half high, dividing into many ſucculent Branches, garniſhed with long, Spear-ſhaped, ſawed Leaves. The Flowers come out from the Joints of the Stalks, on ſlender Foot Stalks about an Inch long, each ſuſtaining a ſingle Flower; but there are 2, 3, or 4 of theſe Foot Stalks ariſing from the ſame Joint. The Flowers are compoſed of 5 large unequal Petals, ſhaped like thoſe of the former Sort, but larger, and ſpread open much wider; there are white, purple, and red of this Sort, as alſo ſingle and double Flowers. If the Seeds of theſe are ſown on a moderate hot Bed in the Spring, the Plants will flower in *June*, but thoſe ſown in the full Ground, will not flower before the Middle of *July*, and theſe will continue flowering till the Froſt puts a Stop to them in the Autumn.

There are 2 other Varieties of this, if not diſtinct Species; one of them grows naturally in the *Eaſt*, and the other in the *Weſt-Indies*; that which comes from the *Eaſt-Indies*, by the Title of Immortal Eagle Flower, is a moſt beautiful Plant; the Flowers are double the Size of thoſe of the common Sort, and very double; they are ſcarlet and white variegated, and purple and white in others; and the Plants producing many Flowers, render them very valuable, and if the Seeds of theſe are carefully ſaved, the Kinds may always be preſerved; but I have raiſed ſome Plants from foreign Seeds, whoſe Flowers were ſo very double as to loſe their male Parts, ſo did not produce any Seeds.

The Seeds of theſe Plants ſhould be ſown on a moderate hot Bed in the Spring, and when the Plants are come up about an Inch high, they ſhould be tranſplanted on another moderate hot Bed at about 4 Inches Diſtance, obſerving to ſhade them from the Sun till they have taken new Root; after which they ſhould have a large Share of free Air admitted to them, at all Times when the Weather is favourable, to prevent their drawing up tall and weak: They will require to be often refreſhed with Water, but it ſhould not be given to them in too great Plenty, for as their Stems are very ſucculent, they are apt to rot with much Moiſture. When the Plants are grown ſo large as to touch each other, they ſhould be carefully taken up with Balls of Earth to their Roots, and each planted into a ſeparate Pot filled with light rich Earth, and plunged into a very moderate hot Bed with a deep Frame, to admit the Plants to grow, ſhading them from the Sun until they have taken freſh Root; then they ſhould have a large Share of Air admitted to them every Day, and by Degrees hardened, ſo as to bear the open Air, into which Part of the Plants may be removed in *July*, placing them in a warm ſheltered Situation, where, if the Seaſon proves favourable, they will flower and make a fine Appearance; but it will be proper to keep Part of the Plants either in a Glaſs Caſe or a deep Frame, in order to get good Seeds, becauſe thoſe in the open Air will not ripen their Seeds unleſs the Summer proves very warm; and the Plants in Shelter muſt have a good Share of free Air every Day, otherwiſe they will grow pale and ſickly; nor ſhould they have too much of the Sun in the Middle of the Day, in very hot Weather, for that occaſions their Leaves hanging and their requiring Water, which is often very hurtful; therefore if the Glaſſes are ſhaded in the Middle of the Day for three or four Hours, the Plants will thrive better, and continue longer in Beauty than when they are expoſed to the great Heat. Thoſe who are curious to preſerve theſe Plants in Perfection, pull off all the ſingle and plain coloured Flowers from the Plants which they preſerve for Seeds, leaving only thoſe Flowers which are double and of good Colours; where this is carefully done, they may be continued without the leaſt Degeneracy conſtantly.

The Sort which grows in the *Weſt-Indies*, is there called Cockſpur. This hath ſingle Flowers as large as the laſt mentioned Sort, but I never ſaw any of them more than half double, and only with white and red Stripes: The Plants are apt to grow to a very large Size before they produce any Flowers, ſo that it is late in the Autumn before they begin to flower, and ſometimes in bad Seaſons they will ſcarce have any Flowers, and but rarely ripen their Seeds here, ſo that few Perſons care to cultivate this Sort, eſpecially if they can have the other.

The third Sort here mentioned grows naturally in *Ceylon*, and in many Parts of *India*; this hath very narrow Spear-ſhaped Leaves, ſawed on their Edges; the Foot Stalks ſuſtain each 3 Flowers, ſmaller than thoſe of the common Sort, ſo are not worthy of a Place in Gardens, except for Variety. This is a tender Plant, and requires the ſame Treatment as the Immortal Eagle Flower.

IMPERATORIA. *Lin. Gen. Pl.* 321. *Tourn. Inſt. R. H.* 316. *Tab.* 168. Maſterwort; in *French*, *Imperatoire.*

The *Characters* are,

It hath an umbellated Flower; the principal Umbel is plain, and compoſed of many ſmaller; the principal Umbel has no Involucrum, but the ſmall ones have, which are compoſed of many narrow Leaves, almoſt as long as the Umbel. The principal Umbel is uniform; the Flowers have 5 Heart-ſhaped Petals, equal and inflexed. They have 5 hairy Stamina, terminated by roundiſh Summits. The Germen is ſituated under the Petals, ſupporting 2 reflexed Styles, crowned by obtuſe Stigmas. The Germen becomes a roundiſh compreſſed Fruit divided in 2 Parts, containing 2 oval bordered Seeds.

We have but one *Species* of this Genus, *viz.*

IMPERATORIA. *Hort. Cliff.* 103. Maſterwort. This is the *Imperatoria major. C. B. P.* 156. Greater Maſterwort, and the *Aſtrantia* of *Dodonæus. Pempt.* 320. Maſterwort, or falſe Pellitory of *Spain.*

This Plant grows naturally on the *Auſtrian* and *Styrian Alps*, and upon other mountainous Places in *Italy*; the Root is as thick as a Man's Thumb, running obliquely in the Ground; it is fleſhy, aromatick, and has a ſtrong acrid Taſte, biting the Tongue and Mouth like Pellitory of *Spain*; the Leaves ariſe immediately from the Root, they have Foot Stalks 7 or 8 Inches long, dividing into 3 very ſhort ones at the Top, each ſuſtaining a trilobate Leaf, indented on the Border; the Foot Stalks are deeply channelled, and when broken emit a rank Odour. The Flower Stalks riſe about 2 Feet high, and divide into 2 or 3 Branches, each being terminated by a pretty large Umbel of white Flowers, whoſe Petals are ſplit; theſe are ſucceeded by oval compreſſed Seeds, ſomewhat like thoſe of Dill, but larger. It flowers in *June*, and the Seeds ripen in *Auguſt*.

This Plant is cultivated in Gardens to ſupply the Markets. It may be propagated either by Seeds, or parting the Roots; if you would propagate it by Seeds, they ſhould be ſown in Autumn ſoon after they are ripe, on a Bed or Border, in a ſhady Situation; obſerving not to ſow the Seeds too thick, nor ſhould they be covered too deep. In the Spring the Plants will appear, when they ſhould be carefully weeded; and if the Seaſon ſhould prove very dry, they ſhould be now and then refreſhed with Water, which will greatly promote their Growth. Toward the Beginning of *May*, if you find the Plants come up too cloſe together, you ſhould prepare a moiſt ſhady Border (and thin the Plants carefully, leaving them about 6 Inches aſunder;) and plant thoſe which you draw up, into the Border about the ſame Diſtance apart every Way, being careful to water them duly, if the Seaſon ſhould prove dry, until they have taken Root; after which Time, theſe Plants (as alſo thoſe remaining in the Seed Beds) will require no other Culture but to keep them clear from Weeds; which may be eaſily effected, by hoeing the Ground between the Plants now and then in dry Weather, which will deſtroy the Weeds, and by ſtirring the Ground, be of great Service to the Plants. The following Autumn theſe Plants ſhould be tranſplanted where they are to remain, which ſhould be in a rich moiſt Soil, and ſhady Situation; where they will thrive much better than if too much expoſed to the Sun, or in a dry Soil, for they delight in Shade and Moiſture; ſo that where theſe are wanting, the Plants will require a conſtant Supply of Water in dry Weather, otherwiſe they will thrive but ſlowly. The Diſtance which theſe Plants ſhould be placed, muſt not be leſs than 2 Feet every Way, for where they like their Situation, they will ſpread and increaſe much. When theſe Plants are rooted, they will require no other Culture, but to keep them clear from Weeds; and in the Spring before they ſhoot, the Ground ſhould be every Year gently dug between the Plants; in doing which, great Care ſhould be had, not to cut or bruiſe their Roots. Theſe Plants, with this Management, will continue ſeveral Years, and produce Seeds in Plenty.

If you would propagate theſe Plants by Offsets, their Roots ſhould be parted at *Michaelmas*, and planted in a ſhady Situation, at the ſame Diſtance as the ſeedling Plants, obſerving to water them until they have taken Root, after which Time they muſt be managed as the Seedlings.

The Roots of this Plant are uſed in Medicine, and are greatly recommended for their Virtue in contagious Diſtempers or the Bites of venomous Creatures; they are alexipharmick and ſudorifick, by ſome they are recommended for Cholicks and Aſthmas, for the Cramp, and all cold Diſeaſes of the Nerves.

INARCHING is a Method of grafting, commonly called *grafting by Approach.* This Method of grafting is uſed, when the Stock you intend to graft on, and the Tree from which you would take the Graft, ſtand ſo near (or can be brought ſo near) that they may be joined together. The Method of performing it is as follows: Take the Branch you would inarch, and having fitted it to that Part of the Stock where you intend to join it, pare away the Rind and Wood on one Side about 3 Inches in Length. After the ſame Manner cut the Stock or Branch in the Place where the Graft is to be united, ſo that the Rind of both may join equally together, that the Sap may meet; then cut a little Tongue upwards in the Graft, and make a Notch in the Stock to admit it; ſo that when they are joined, the Tongue will prevent their ſlipping, and the Graft will more cloſely unite with the Stock. Having thus placed them exactly together, you muſt tie them with ſome Baſs, or other ſoft Tying; then cover the Place with grafting Clay, to prevent the Air from entering to dry the Wound, or the Wet from getting in to rot the Stock: You ſhould alſo fix a Stake into the Ground to which that Part of the Stock, as alſo the Graft, ſhould be faſtened, to prevent the Wind from breaking them aſunder, which is often the Caſe when this Precaution is not obſerved.

In this Manner they are to remain about 4 Months, in which Time they will be ſufficiently united, and the Graft may then be cut from the Mother Tree, obſerving to ſlope it off cloſe to the Stock; and if at this Time you cover the joined Parts with freſh grafting Clay, it will be of great Service to the Graft.

This Operation is always performed in *April* or *May*, that the Graft may unite with the Stock before the ſucceeding Winter, and is commonly practiſed upon Oranges, Myrtles, Jaſmines, Walnuts, Firs, Pines, and ſeveral other Trees, which will not ſucceed by common grafting or budding. But although I have mentioned Orange Trees among the reſt, yet I would by no Means adviſe this Practice where the Trees are deſigned to grow large, which, in this Method, they rarely ever will do; and it is chiefly practiſed upon thoſe Trees only as a Curioſity, to have a young Plant with Fruit upon it, in a Year or two from Seed, by inarching a bearing Branch into a young Stock, whereby it is effected, yet theſe Plants are ſeldom long lived.

INDIGO. *See* Anil.

INGA. *Plum. Nov. Gen.* 13. *Tab.* 19. *Mimoſa. Lin. Gen. Pl.* 507.

This is the *American* Name of the Plant, for which we have no *Engliſh* one.

The *Characters* are,

The Flower has a permanent Empalement of 1 *Leaf, tubulous, and divided into* 5 *Parts at the Top. It hath* 1 *Petal, is Funnel-ſhaped, and cut into* 5 *Segments at the Brim, where it is fringed, out of which ariſe a great Number of Stamina,* 3 *Times the Length of the Tube, terminated by ſmall roundiſh Summits. At the Bottom of the Tube is ſituated an oblong Germen, ſupporting a long ſlender Style, crowned by a roundiſh Stigma; the Germen afterward becomes a fleſhy Pod, including ſeveral irregular Seeds.*

The *Species* are,

1. INGA *foliis pinnatis, petiolo articulato marginato, leguminibus latis carnoſis & undulatis.* *Inga* with winged Leaves, whoſe Foot Stalk is bordered and jointed, and broad, fleſhy, waved Pods. *Inga flore albo fimbriato, fructu dulci. Plum. Nov. Gen.* 13. *Inga* with a white fringed Flower, and a ſweet Fruit.

2. INGA *foliis pinnatis, petiolo articulato marginato leguminibus tenuiſſimis lanuginoſis.* *Inga* with winged Leaves, whoſe Foot Stalk is jointed and bordered, and very narrow woolly Pods.

The 1ſt Sort grows naturally on the North Side of the Iſland of *Jamaica*, and on the *Spaniſh* Main. This riſes with a woody Stalk 15 or 16 Feet high, covered with a white Bark, ſending out many crooked irregular Branches which hang to the Ground; theſe are garniſhed with winged Leaves, compoſed of 3 or 4 Pair of oblong oval Lobes, placed oppoſite on a Mid-rib, which has a Border or Wing on each Side between the Lobes; they are covered with a browniſh Down on their under Side, but are of a lucid green on their upper Side. The Flowers come out in Spikes toward the End of the Branches, each ſtanding in a diſtinct Empalement, which is tubulous, and divided into 5 Segments at the Top, having a great Number of very long purple Stamina, and are ſucceeded by long fleſhy Pods 3 Quarters of an Inch broad, filled with a ſweet Pulp, in which the Seeds are lodged; this Pulp is frequently eaten by the Negroes.

The 2d Sort grows plentifully at *La Vera Cruz*, from whence the late Dr. *Houſtoun* ſent it to *Europe*. This ſeldom riſes more than 8 or 10 Feet high, the Branches are covered with a brown Down, as are the under Side of the Leaves; the Lobes are not ſo obtuſe as thoſe of the other Sort. The Flowers come out from the Wings of the Branches in ſmall Spikes; they are of a purpliſh Colour within, but of an herbaceous Colour without, with long purple Stamina, and are ſucceeded by long narrow downy Pods, containing ſeveral irregular Seeds.

Theſe Plants are preſerved by thoſe Perſons who are curious in collecting exotick Plants; they are propagated by Seeds, which ſhould be ſown early in the Spring, in Pots filled with light rich Earth, and plunged into a hot Bed of Tanners Bark. When the Plants are come up 2 Inches high, they ſhould be carefully tranſplanted into ſeparate Pots filled with light rich Earth, and then plunged into the hot Bed again, being careful to ſhade them from the Sun until they have taken new Root, after which Time they muſt be gently watered; and in hot Weather the Glaſſes of the hot Bed ſhould be raiſed every Day, to admit freſh Air to the Plants, to prevent their being drawn up too weak. At *Michaelmas* theſe Plants muſt be removed into the Stove, and plunged into the Tan in the warmeſt Part of the Bed. During the Winter Seaſon they muſt be kept very warm, and once in a Week or 10 Days refreſhed with Water, but it muſt not be given to them in too large Quantities in cold Weather; in the Summer they will require to be oftener watered, and in hot Weather they ſhould have a large Share of freſh Air, by opening the Glaſſes of the Stove; but they muſt not be removed out of the Stove, for they are too tender to endure the open Air of this Country, in the warmeſt Part of the Year. When the Plants have filled the Pots with their Roots, they ſhould be tranſplanted into larger, and their Roots ſhould be then carefully trimmed. With this Management the Plants will thrive, and in a few Years produce Flowers, ſo will add to the Variety amongſt other tender exotick Plants in the Stove.

INOCULATING, or Budding. This is commonly practiſed upon all Sorts of Stone Fruit, in particular, ſuch as Peaches, Nectarines, Cherries, Plums, *&c.* as alſo upon Oranges and Jaſmines, and is preferable to any Sort of grafting for moſt Sorts of Fruit. The Method of performing it is as follows: You muſt be provided with a ſharp Penknife, having a flat Haft (the Uſe of which is to raiſe the Bark of the Stock, to admit the Bud), and ſome ſound Baſs Mat, which which ſhould be ſoaked in Water to encreaſe its Strength, and make it more pliable; then having taken off the Cutting from the Trees you would propagate, you ſhould chooſe a ſmooth Part of the Stock about 5 or 6 Inches above the Surface of the Ground, if deſigned for Dwarfs; but if for Standards, they ſhould be budded 6 Feet above Ground; then with your Knife make an horizontal Cut croſs the Rind of the Stock, and from the Middle of that Cut make a Slit downwards about two Inches in Length, ſo that it may be in the Form of a T; but you muſt be careful not to cut too deep, leſt you wound the Stock: Then having cut off the Leaf from the Bud, leaving the Foot Stalk remaining, you ſhould make a croſs Cut about half an Inch below the Eye, and with your Knife ſlit off the Bud, with Part of the Wood to it, in Form of an Eſcutcheon: This done, you muſt with your Knife pull off that Part of the Wood which was taken with the Bud, obſerving whether the Eye of the Bud be left to it, or not, (for all thoſe Buds which loſe their Eyes in ſtripping, ſhould be thrown away, being good for nothing;) then having gently raiſed the Bark of the Stock where the Croſs Inciſion was made, with the flat Haft of your Penknife clear to the Wood, you ſhould thruſt the Bud therein, obſerving to place it ſmooth between the Rind and the Wood of the Stock, cutting off any Part of the Rind belonging to the Bud, which may be too long for the Slit made in the Stock; and ſo having exactly fitted the Bud to the Stock, you muſt tie them cloſely round with Baſs Mat, beginning at the under Part of the Slit, and ſo proceed to the Top, taking Care that you do not bind round the Eye of the Bud, which ſhould be left open.

When your Buds have been inoculated 3 Weeks or a Month, you will ſee which of them have taken; thoſe of them which appear ſhriveled and black, being dead, but thoſe which remain freſh and plump, you may depend are joined; and at this Time you ſhould looſen the Bandage, which, if not done in Time, will pinch the Stock, and greatly injure, if not deſtroy, the Bud.

The *March* following you muſt cut off the Stock about 3 Inches above the Bud, ſloping it that the Wet may paſs off, and not enter the Stock; to this Part of the Stock left above the Bud, it is very proper to faſten the Shoot which proceeds from the Bud, and would be in Danger of being blown out, if not prevented; but this muſt continue on no longer than one Year, after which it muſt be cut off cloſe above the Bud, that the Stock may be covered thereby.

The Time for Inoculoting is, from the Middle of *June*, until the Middle of *Auguſt*, according to the Forwardneſs of the Seaſon, and the particular Sorts of Trees, which may be eaſily known, by trying the Buds whether they will come off well from the Wood. But the moſt general Rule is, when you obſerve the Buds formed at the Extremity of the ſame Year's Shoots, which is a Sign of their having finiſhed their Spring Growth.

The firſt Sort commonly inoculated is the Apricot, and the laſt the Orange Tree, which ſhould never be done until the Middle of *Auguſt*; and in doing this Work, you ſhould always make Choice of cloudy Weather, for if it be done in the Middle of the Day, in very hot Weather, the Shoots will perſpire ſo faſt, as to leave the Buds deſtitute of Moiſture; nor ſhould you take off the Cuttings from the Trees long before they are uſed; but if you are obliged to fetch your Cuttings from ſome Diſtance, as it often happens, you ſhould then be provided with a Tin Inſtrument, having a Socket about 10 Inches long, and a Cover to the Top, which muſt have 5 or 6 Holes; in this Socket you ſhould put as much Water as will fill it about 2 or 3 Inches high, and place your Cuttings therein in an upright Poſition, ſo that that Part which was cut from the Tree may be ſet in the Water, and ſo faſten down the Cover to keep out the Air, and the Holes in the Cover will be ſufficient to let the Perſpiration of theſe Branches paſs off, which, if pent in, would be very hurtful to them; and you muſt be careful to carry it upright, that the Water may not reach to the Buds, for it is a very wrong Practice in thoſe who throw their Cuttings all over in Water, which ſo ſaturates the Buds with Moiſture, that they have no attractive Force left to imbibe the Sap of the Stock, whereby they very often miſcarry.

But before I leave this Head, I beg Leave to obſerve, that though it is the ordinary Practice to diveſt the Bud of that Part of the Wood which was taken from the Shoot with it; yet, in many Sorts of tender Trees, it is beſt to preſerve a little Wood to the Bud, without which they often miſcarry. The not obſerving this, has occaſioned ſome People to imagine, that ſome Sorts of Trees are not to be propagated by Inoculation, whereas, if they had performed it in this Method, they might have ſucceeded, as I have ſeveral Times experienced.

INTYBUS. *See* Cichorium.

INULA. *Lin. Gen. Pl.* 860. *Enula Cæſalp. Helenium. Raii. Meth.* 33. *Aſter. Tourn. Inſt. R. H.* 481. *Tab.* 274. Elecampane.

The *Characters* are,

It hath a radiated compound Flower, with an imbricated Empalement, compoſed of looſe, ſpreading, ſmall Leaves, the outer being the broadeſt. The Diſk, or Middle of the Flower is compoſed of hermaphrodite Flowers, and the Border, or Ray of the female half Florets, ſtretched out like a Tongue. The hermaphrodite Flowers are Funnel-ſhaped, erect, and cut into 5 Parts at the Top; theſe have 5 ſhort ſlender Stamina, terminated by cylindrical Summits, which coaleſce at the Top; they have 1 long Germen, crowned with Down, ſupporting a ſlender Style the Length of the Stamina, crowned by an upright bifid Stigma. The female Flowers have a narrow entire Tongue, no Stamina, but a long crowned Germen with a hairy Style, and an upright Stigma. The Germen in both Flowers becomes a ſingle, narrow four-cornered Seed, crowned with a Down, ſitting on a naked Receptacle.

The *Species* are,

1. Inula *foliis ovatis, rugoſis, ſubtus tomentoſis, calycum ſquamis ovatis. Amæn. Acad.* 1. p. 410. Elecampane with oval rough Leaves, woolly on their under Side, and the Scales of the Empalement oval. *Aſter omnium maximus, Helenium dictus. Tourn. Inſt.* 483. The greateſt Starwort, called Elecampane.

2. Inula *foliis dentatis hirſutis, radicalibus ovatis, caulinis lanceolatis amplexicaulibus, caule paucifloro. Lin. Sp. Pl.* 881. *Inula* with hairy indented Leaves, thoſe at the Bottom oval, but thoſe on the Stalks Spear-ſhaped, and embracing the Stalks, which have but few Flowers. *Aſter luteus radice odorâ. C. B. P.* 266. Yellow Starwort with a ſweet Root.

3. Inula *foliis lanceolatis recurvis ſerrato-ciliatis, floribus ſolitariis, ramis angulatis. Amæn. Acad.* 1. p. 410. *Inula* with Spear-ſhaped recurved Leaves, which are

ſawed, hairy Flowers growing ſingly, and angular Branches. *Aſter montanus luteus, ſalicis glabro folio. C. B. P.* 266. Yellow Mountain Starwort with a ſmooth Willow Leaf.

4. INULA *foliis lanceolatis recurvis, ſubdentatis, ſcabris, floribus ſubfaſciculatis. Lin. Sp. Pl.* 883. *Inula* with Spear-ſhaped recurved Leaves, indented and rough, and Flowers growing in Cluſters. *Aſter Thuringiacus altiſſimus latifolius, montanus, flore luteo parvo. Haller. jen.* 181. Talleſt broad leaved Mountain Starwort of *Thuringia* with a ſmall yellow Flower.

5. INULA *foliis linearibus carnoſis tricuſpidatis. Lin. Sp. Pl.* 883. *Inula* with narrow fleſhy Leaves ending in 3 Points. *Aſter maritimus flavus Crithmum chryſanthemum dictus. Raii. Syn. Ed.* 3. p. 174. Yellow maritime Starwort, called Golden Samphire.

6. INULA *foliis lanceolatis pubeſcentibus integerrimis, caule unifloro. Lin. Sp. Pl.* 884. *Inula* with ſoft, hairy, Spear-ſhaped, entire Leaves, and 1 Flower on a Stalk. *Aſter montanus luteo magno flore. C. B. P.* 267. Mountain Starwort with a large yellow Flower.

7. INULA *foliis oblongis, integris, hirſutis, caule piloſo, corymboſo, floribus confertis. Lin. Sp. Pl.* 881. *Inula* with oblong, entire, rough Leaves, a hairy Stalk divided by a Corymbus, and Flowers growing in Cluſters. *Conyza Pannonica lanuginoſa. C. B. P.* 265. *Hungarian* woolly Fleabane.

8. INULA *foliis lanceolatis, ſerratis, ſubamplexicaulibus, ſubtus villoſis, caule ramoſo erecto. Lin. Sp. Pl.* 882. *Inula* with Spear-ſhaped, ſawed Leaves embracing the Stalk, hairy on their under Side, and an erect branching Stalk. *Aſter paluſtris luteus, folio longiore lanuginoſo. Tourn. Inſt.* 483. Yellow Marſh Starwort with a longer woolly Leaf.

9. INULA *foliis lanceolatis ſemiamplexicaulibus hiſpidis, caulibus ſubunifloris teretibus. Lin. Sp. Pl.* 883. *Inula* with Spear-ſhaped prickly Leaves, half embracing the Stalk, which is taper and has but one Flower. *Aſter luteus, ſalicis folio hirſuto. C. B. P.* 266. Yellow *Aſter* with a hairy Willow Leaf.

10. INULA *foliis ovatis, hirſutis, ſemiamplexicaulibus, caule ramoſo piloſo, ſquamis calycinis lanceolatis. Inula* with oval hairy Leaves, half embracing the Stalk, which is branching and hairy, and Spear-ſhaped Scales to the Empalement. *Helenium Ciſti folio non crenato, magno flore. Vaill. Acad. R. S.* 1720. Elecampane with a Rock Roſe unnotched Leaf, and a large Flower.

11. INULA *foliis ovato-lanceolatis denticulatis ſeſſilibus, caule piloſo erecto Corymboſo. Inula* with oval, Spear-ſhaped, indented Leaves, ſitting cloſe to the Stalk, and an upright hairy Stalk, terminating in a Corymbus.

12. INULA *foliis linearibus carnoſis tricuſpidatis, caule fruticoſo. Inula* with narrow fleſhy three-pointed Leaves, and a ſhrubby Stalk. *Aſter Canarienſis fruteſcens, folio tridentato craſſa. Hort. Chelſ.* 26. Shrubby *Canary* Starwort with a thick Leaf, ending in 3 Points.

13. INULA *foliis linearibus hirſutis oppoſitis, pedunculis nudis unifloris. Inula* with narrow hairy Leaves, placed oppoſite, and naked Foot Stalks, having 1 Flower. *Aſter ſatureja foliis conjugatis & piloſis, flore luteo. Houſt. Mſſ.* Starwort with hairy ſavoury Leaves growing by Pairs, and a yellow Flower.

14. INULA *caule erecto hiſpido, foliis lanceolatis aſperis, floribus alaribus ſolitariis ſeſſilibus, terminalibus umbellatis. Inula* with an erect prickly Stalk, Spear-ſhaped rough Leaves, Flowers proceeding ſingly from the Sides of the Stalks, ſitting cloſe, and terminating in an Umbel. *Aſter luteus Marianus Saligneis brevioribus foliis hirſutis pubeſcentibus, ſummo caule ramoſus. Pluk. Mant.* 30. Yellow Starwort of *Maryland*, with ſhorter, ſallow, hairy Leaves, and the Top of the Stalk branching.

15. INULA *foliis lanceolatis acutis, ſubtus trinerviis, ſquamis calycinis acutis caule fruticoſo. Inula* with Spear-ſhaped acute Leaves, having 3 Veins on their under Side; the Scales of the Empalement ſharp pointed, and a ſhrubby Stalk.

The 1ſt Sort grows naturally in ſeveral Parts of *England*, but is alſo cultivated in Gardens for the Sake of their Roots, which are uſed in Medicine, and are accounted Carminative, Sudorifick, and Alexipharmick, of great Service in Shortneſs of Breath, Coughs, Stuffing of the Lungs, and infectious Diſtempers.

It hath a perennial Root, thick, branching, and of a ſtrong Odour. The lower Leaves are 8 or 9 Inches long, and 4 broad in the Middle, rough on their upper Side, but downy on their under. The Stalks riſe about 3 Feet high, and divide toward the Top into ſeveral ſmaller Branches, and are garniſhed with oblong oval Leaves, which are indented on their Edges, and end in acute Points. The Flowers terminate their Stalks, each Branch ending with 1 large, yellow, radiated Flower, ſitting in a ſcaly Empalement, whoſe Scales are oval, and placed like Scales on Fiſhes over each other. The Flowers are ſucceeded by narrow four-cornered Seeds crowned with Down. It flowers in *June* and *July*, and the Seeds ripen the latter End of *Auguſt*.

This Sort may be propagated by Seeds, which ſhould be ſown in Autumn, ſoon after they are ripe, for if they are kept till the Spring, they ſeldom grow; but where they are permitted to ſcatter, the Plants will come up the following Spring without any Care, and may be either tranſplanted the following Autumn, or if they are deſigned to remain, they ſhould be hoed out to the Diſtance of 10 Inches, or a Foot each Way, and conſtantly kept clean from Weeds; theſe Roots will be fit for Uſe the 2d Year.

But moſt People propagate this by Offsets, which, if carefully taken from the old Roots, with a Bud, or Eye, to each, will take Root very eaſily; the beſt Time for this is the Autumn, as ſoon as the Leaves begin to decay; theſe ſhould be planted in Rows about a Foot aſunder, and 9 or 10 Inches diſtant in the Rows; the Spring following the Ground muſt be kept clean from Weeds, and if in Autumn it is ſlightly dug, it will promote the Growth of the Roots; theſe will be fit for Uſe after 2 Years Growth, but the Roots will abide many Years, if permitted to ſtand; however the young Roots are preferable to thoſe which are old and ſtringy. It loves a gentle loamy Soil, not too dry.

The 2d Sort hath a perennial Root, from which ariſe ſeveral Stalks, about 2 Feet high. The Leaves at Bottom are oval, indented, and hairy; thoſe above embrace the Stalks with their Baſe. The Stalks are divided into ſeveral Branches, garniſhed with a few ſcattering yellow

low Flowers. The Root has a very ſweet Odour when broken. It flowers in *July*, but rarely ripens Seeds here.

The 3d Sort hath a perennial Root, from which ariſes many Spear-ſhaped Leaves, ſmooth and recurved. The Stalks riſe near 2 Feet high; they are angular, and branch at the Top into ſeveral Foot Stalks, each ſuſtaining one yellow radiated Flower. It flowers in *June*, *July*, and *Auguſt*, and the Seeds ripen in *September*.

The 4th Sort riſes with an upright Stalk, between 3 and 4 Feet high, with Spear-ſhaped Leaves, turned backward, indented on their Edges, and rough on their upper Side The Flowers are collected in cloſe Bunches on the upper Part of the Stalks; they are ſmall and yellow. It grows on the *Alps*, and other mountainous Parts of *Europe*. It flowers in *June*, and the Seeds ripen in Autumn.

The 5th Sort grows naturally on the Sea Coaſts in many Parts of *England*. I have ſeen it growing plentifully near *Sheerneſs*, in the Iſle of *Sheepy*, in *Kent*; this riſes with an upright Stalk, a Foot and a Half high, garniſhed with fleſhy ſucculent Leaves, which come out in Cluſters, about an Inch and a Quarter long, and one Eighth of an Inch broad, ending in 3 Points. The Flowers come out at the Top of the Stalks in ſmall Umbels; they are yellow, and have a Border of Rays; this flowers in *July*, and the Seeds ripen in Autumn. The younger Branches of this Plant are frequently ſold in the *London* Markets for Samphire, but this is a great Abuſe, becauſe this Plant has none of the warm aromatick Taſte of the true Samphire.

The 6th Sort grows naturally in *Germany*; this riſes with upright Stalks, a Foot and a Half high, garniſhed with Spear-ſhaped Leaves, covered with ſoft Hairs, and entire. The Stalks do each ſupport 1 large yellow Flower, which appears in *July*, but rarely ripens Seeds here.

The 7th Sort has a perennial Root, and an annual Stalk; this grows naturally in *Hungary*. The Leaves are oblong and hairy. The Stalks branch at the Top in Form of a Corymbus. The Flowers are ſmall, yellow, and are in cloſe Cluſters; theſe appear in *July*, but ſeldom perfect Seeds in *England*.

The 8th Sort grows naturally in *Auſtria*, *Bohemia*, and other Parts of *Germany*; this hath a perennial Root, and an annual Stalk, which riſes near 2 Feet high, garniſhed with Spear-ſhaped woolly Leaves, which are ſawed, and cloſely embrace the Stalks with their Baſe. The upper Part of the Stalk divides into 2 or 3 erect Branches, or Foot Stalks, each ſuſtaining 1 pretty large deep yellow Flower; theſe are in Beauty in *July*, but ſeldom ripen Seeds here.

The 9th Sort grows naturally in the South of *France*, *Spain*, and *Italy*; this hath a perenninl Root, from whence ariſe ſeveral Stalks, about 1 Foot high; the lower Leaves are Spear-ſhaped and prickly, the upper half embrace the Stalks, which divide into ſeveral Branches, each being terminated by 1 yellow Flower. This Flowers in *July*, but ſeldom perfects Seeds here.

The 10th Sort hath a perennial Root, and an annual Stalk, which riſes about a Foot high, dividing into many Branches, garniſhed by oval hairy Leaves, which half embrace the Stalks with their Baſe; each of the Branches is terminated by 1 large yellow Flower, whoſe Empalement is compoſed of oval Scales. It flowers in *July* and *Auguſt*, but never perfects Seeds in this Country.

The 11th Sort grows naturally in *Hungary*; this riſes with ſingle upright Stalks. near 2 Feet high, garniſhed with oval Spear-ſhaped Leaves, ſlightly indented on the Edges, ſitting cloſe to the Stalks, which are hairy, and dividing in Form of a Corymbus at the Top. The Flowers are pretty large, of a pale yellow Colour, and appear in *July*, but are not ſucceeded by Seeds in this Country.

The 12th Sort grows naturally in the *Canary* Iſlands; this riſes with ſeveral ſhrubby Stalks, near 4 Feet high, which divide into ſmaller Branches, garniſhed with Cluſters of narrow fleſhy Leaves, divided into 3 Parts at their Points. The Flowers come out on the Side of the Branches at the Top of the Stalks; they are ſmall, and of a pale yellow Colour, appearing in *Auguſt*.

The 2d, 3d, 4th, 6th, 7th, 8th, 9th, 10th, and 11th Sorts, are abiding Plants, which will thrive and flower in the open Air in *England*; they may be all propagated by parting their Roots. The beſt Time for doing this is in Autumn, at which Time the Plants may be removed; theſe may be intermixed with other flowering Plants in the Borders of large Gardens, where they will make an agreeable Variety during their Continuance in flower. As theſe Roots multiply pretty faſt, they ſhould be allowed Room to ſpread, therefore ſhould not be planted nearer than 2 Feet from other Plants; and if they are removed every third Year, it will be often enough, provided the Ground between them be dug every Winter, and, in Summer, if they are kept clear from Weeds, they will require no other Care.

As ſome of theſe Sorts produce good Seeds in *England*, they may be propagated by ſowing the Seeds in the Spring, on a Border of light Earth expoſed to the Eaſt, where the Morning Sun only is admitted, and when the Plants appear, they ſhould be kept clean from Weeds till they are fit to remove, when they ſhould be tranſplanted on a ſhady Border, 6 Inches aſunder; during the Summer Seaſon they ſhould be kept clean from Weeds, and in Autumn they may be tranſplanted where they are to remain.

The 5th Sort grows naturally in the Salt Marſhes which are flowed by the Tides, and is ſeldom admitted into Gardens. The Roots are perennial, but the Stalks decay in Autumn; and if any one has Curioſity to keep a Plant or two of it in their Gardens, they may tranſplant it into a ſhady Border from the Place of its natural Growth, and, by keeping it moiſt in dry Weather, it will thrive pretty well, but the Stalks will not riſe ſo high, nor will the Leaves be near ſo fleſhy as in the Salt Marſhes.

The 12th Sort will not live abroad in the open Air in *England*, during the Winter Seaſon, ſo muſt be removed into Shelter in Autumn, but ſhould have as much free Air as poſſible at all Times, when the Weather is mild, otherwiſe it is apt to draw up weak. In cold Weather the Plants muſt have very little Water, for their Stalks and Leaves being ſucculent, are very apt to rot with too much Wet; in Summer they ſhould be placed abroad with other hardy exotick Plants, in a ſheltered Situation, where they will add to the Variety, though they are Plants of no great Beauty, and ſeldom flower in *England*, unleſs the Summer is very warm. This is eaſily propagated by Cuttings, any Time in Summer, which, if planted in a ſhady Border, will take Root in a ſhort Time.

The 13th Sort was diſcovered growing at *La Vera Cruz*; this riſes with a ſhrubby Stalk, about 2 Feet high, dividing into many ſmaller Branches, which are hairy, and garniſhed with narrow ſtiff Leaves, placed oppoſite, without Foot Stalks; from the Edges of theſe ariſe long Hairs, which are ſtiff, and come out by Pairs; at the End of the Branches ariſe the naked Foot Stalks, 4 or 5 Inches long, ſuſtaining 1 ſmall yellow radiated Flower.

This is propagated by Seeds, which muſt be ſown on a hot Bed, and the Plants treated afterward as other tender Exoticks; they require a Bark Stove to preſerve them through the Winter in *England*.

The 14th Sort was ſent me from *Maryland*, where it grows naturally; this riſes with a ſtrong Stalk, about a Foot and a Half high, pretty cloſely ſet with prickly Hairs, and garniſhed with rough Spear-ſhaped Leaves, about 3 Inches long, and near 1 Inch broad in the Middle; toward the upper Part of the Stalk there are ſingle Flowers coming from the Wings at each Joint, and the Stalk is terminated by a Cluſter of ſmall yellow Flowers, diſpoſed in Form of an Umbel. This Plant flowers here in *Auguſt*, but has not as yet perfected Seeds in *England*.

The 15th Sort was diſcovered growing naturally at *Carthagena*, by the late Dr. *Houſtoun*; this riſes with a ſhrubby Stalk 10 or 12 Feet high, dividing into ſeveral ligneous Branches, garniſhed with Spear-ſhaped Leaves, 5 Inches long, and 1 Inch and a Half broad in the Middle, and ſmooth on their upper Side, but on the under have 3 longitudinal Veins. The Flowers are produced at the End of the Branches, having very large ſcaly Empalements; they are as large as a ſmall Sun Flower, of a pale yellow Colour.

This Plant is too tender to live in the open Air in *England*, ſo muſt be conſtantly kept in the Bark Stove. It is propagated by Seeds, which muſt be procured from the Country where it grows naturally, for it does not produce any here; theſe muſt be ſown on a hot Bed, and when the Plants are fit to remove, they ſhould be each planted into a ſmall Pot filled with light Earth, and plunged into a freſh hot Bed, treating them as other tender Plants of the ſame Country.

JOHNSONIA. *Dale. Callicarpa. Lin. Gen. Pl.* 127. *Spondylococcus. Mitch.* 20. This Plant was titled by the late Dr. *Dale* of *South Carolina*, in Memory of Dr. *Johnſon*, who publiſhed an Edition of *Gerard's Herbal*, corrected and improved.

The *Characters* are,

The Flower hath an Empalement of 1 *Leaf, cut at the Brim into ſhort Segments, which are erect. It hath* 1 *Petal, which is tubulous, and divided into* 4 *Parts at the Brim, which ſpread open. It hath* 4 *ſlender Summits, longer than the Petal, terminated by oblong yellow Summits. In the Center is ſituated a roundiſh Germen, ſupporting a ſlender Style, crowned by a thick obtuſe Stigma. The Germen becomes a ſmooth globular Berry, incloſing* 4 *hard oblong Seeds.*

We have but one *Species* of this Genus, *viz.*

JOHNSONIA *floribus verticillatis ſeſſilibus, foliis ovato-lanceolatis oppoſitis, caule fruticoſo. Dale.* Shrubby *Johnſonia* with oval Spear-ſhaped Leaves, ſitting cloſe to the Stalks, and placed oppoſite, and Flowers growing in Whorls. *Callicarpa. Act. Upſal.* 1741, and Mr. *Cateſby*, in his Hiſtory of *Carolina*, has figured it under the following Title, *Frutex baccifer verticillatus, foliis ſcabris latis dentatis & conjugatis, baccis purpureis denſè congeſtis*, Vol. II. p. 47.

This Shrub grows plentifully in the Woods near *Charles Town*, in South *Carolina*. It riſes from 4 to 6 Feet high, ſending out many Branches from the Side, woolly when young, like thoſe of the Wayfaring Tree, and garniſhed with oval Spear-ſhaped Leaves, placed oppoſite by Pairs, ſtanding on pretty long Foot Stalks; they are about 3 Inches long, and 1 Inch and a Quarter broad in the Middle, growing narrow at both Ends; they are a little indented on their Edges, their Surface rough, and a little hoary. The Flowers come out in Whorls round the Stalks, ſitting very cloſe to the Branches at the Foot Stalks of the Leaves; they are ſmall, tubulous, cut into 4 obtuſe Segments at the Top, which expand, and are of a deep purple Colour; theſe are ſucceeded by ſoft ſucculent Berries, which turn firſt to a bright red Colour, but afterward change to a deep purple when ripe, and incloſe 4 hard oblong Seeds.

The Seeds of this Plant were ſent by Mr. *Cateſby*, from *Carolina*, in 1724, and many of them were raiſed in ſeveral curious Gardens in *England*; moſt, if not all, of them were afterward planted in the open Air, where they flouriſhed very well for ſeveral Years, and ſeveral of the Plants produced Flowers in the *Chelſea* Garden for 4 or 5 Years, but theſe were not ſucceeded by Fruit; and in the ſevere Froſt in 1740, they were moſt of them deſtroyed, as were alſo the young Plants which were raiſed from Dr. *Dale*'s Seeds the Year before, which were only ſheltered under a Frame, ſo that until the Doctor ſent a freſh Supply of Seeds in 1744, there were ſcarce any of the Plants living in the *Engliſh* Gardens.

This Plant riſes eaſily from Seeds, if they are ſown in a moderate hot Bed; the beſt Way is to ſow the Seeds in Pots, and plunge them into a Tan Bed, and when the Plants come up, and have obtained ſome Strength, they ſhould be gradually inured to the open Air, into which they ſhould be removed in *June*, and placed in a ſheltered Situation, where they may remain till Autumn, during which Time they muſt be kept clear from Weeds, and gently refreſhed with Water in dry Weather, but as theſe young Plants are tender, they ſhould be placed under a Frame before the early Froſt comes on, for a Froſt in Autumn will kill the tender Part of their Shoots, which often cauſes their Stalks to decay moſt Part of their Length before the Spring. During the Winter Seaſon they ſhould be ſcreened from Froſt, but in mild Weather they muſt enjoy the free Air, otherwiſe their Shoots will turn mouldy and decay. The following Spring, juſt before the Plants ſhoot, they ſhould be carefully turned out of the Pots, ſo as not to break their Roots, and Part of them may be planted in ſmall Pots filled with light Earth, and the others into a Nurſery Bed in a warm Situation, at about 4 or 5 Inches aſunder; thoſe in the Pots ſhould be plunged into a moderate hot Bed, which will forward their taking freſh Root, but afterward muſt be hardened to bear the open Air as before; theſe Plants in Pots ſhould be ſheltered under a Frame in Winter for 3 or 4 Years, till they have obtained Strength, then they may be turned out of the Pots, and planted in a warm Situation, where they will live in the open Air in common Winters, but in ſevere Froſt they are in Danger of being killed, if they are not ſheltered, therefore the Surface of the Ground about their Roots ſhould be covered with old Tan to keep out the Froſt, and their Tops covered with Straw, Peas Haulm, or Fern, which will protect them.

Thoſe Plants in the Beds ſhould alſo be covered with Mats, or Straw, in froſty Weather, and after they have obtained Strength, they may be tranſplanted into a warm Situation, and treated every Winter as the other.

The Leaves of this Shrub were often uſed by Dr. *Dale*, in dropſical Caſes, with very good Succeſs. A particular Account of the Virtues of this, and many other Plants of *Carolina*, was ſent me, with dried Samples of each, by the Doctor during the laſt War, but as the Ships were taken in their Paſſage, they were all loſt, and the Doctor dying ſoon after, I could never recover them.

JONQUIL. *See* Narciſſus.

IPOMOEA. *Lin. Gen. Pl.* 199. *Quamoclit. Tourn. Inſt. R. H.* 116, *Tab.* 39. *Quamoclit*, or Scarlet Convolvulus.

The *Characters* are,

The Flower hath a ſmall permanent Empalement, cut into 5 *Parts at the Top. The Petal is Funnel-ſhaped, having a long cylindrical Tube, whoſe Brim is* 5 *pointed, ſpreading open flat. It hath* 5 *Awl-ſhaped Stamina, nearly the Length of the Petal, terminated by roundiſh Summits. In the Bottom of the Tube is ſituated a round Germen, ſupporting a ſlender Style, crowned by a roundiſh Stigma. The Germen becomes a roundiſh Capſule with* 3 *Cells, incloſing* 3 *oblong Seeds.*

The *Species* are,

1. IPOMOEA *foliis pinnatifidis linearibus, floribus ſolitariis. Hort. Cliff.* 60. *Ipomoea* with very narrow many pointed Leaves, and ſolitary Flowers. *Quamoclit foliis tenuiter inciſis & pinnatis. Tourn. Inſt. R. H.* 116. *Quamoclit* with narrow cut, and winged Leaves.

2. IPOMOEA *foliis cordatis acuminatis, baſi angulatis, pedunculis multifloris. Hort. Upſal.* 39. *Ipomoea* with Heart-ſhaped pointed Leaves, angular at the Baſe, and many Flowers on a Stalk. *Quamoclit Americana folio hederæ flore coccineo. Com. Rar. Pl.* 21. *American Quamoclit* with an Ivy Leaf and a ſcarlet Flower, commonly called Scarlet Convolvulus.

3. IPOMOEA *foliis cordatis acutis integerrimis, floribus ſolitariis. Prod. Leyd.* 430. *Ipomoea* with acute Heart-ſhaped entire Leaves, and ſolitary Flowers. *Quamoclit Americana ſolani folio, flore roſeo. Plum. Cat.* 3. *American Quamoclit* with a Nightſhade Leaf, and a Roſe-coloured Flower.

4. IPOMOEA *foliis cordatis integerrimis floribus confertis, corollis indiviſis. Sanv. Monſp.* 114. *Ipomoea* with Heart-ſhaped entire Leaves, Flowers growing in Cluſters, and undivided Petals. *Quamoclit foliis ampliſſimis cordiformibus. Plum. Cat.* 4. *Quamoclit* with large Heart-ſhaped Leaves.

5. IPOMOEA *foliis palmatis, lobis ſeptenis lanceolatis integerrimis. Hort. Upſal.* 39. *Ipomoea* with Hand-ſhaped Leaves compoſed of 7 Spear-ſhaped entire Lobes. *Convolvulus major heptaphyllus, flore ſulphureo odorato. Sloan. Cat.* 55. Greater ſeven leaved Bindweed with a yellow ſweet Flower, called *Spaniſh* Arbour Vine.

6. IPOMOEA *foliis trilobis cordatis, pedunculis trifloris. Lin. Sp. Pl.* 161. *Ipomoea* with Heart-ſhaped Leaves having 3 Lobes, and 3 Flowers on a Foot Stalk. *Convolvulus pentaphyllos minor, flore purpureo. Sloan. Cat.* 55. Smaller 5 leaved Bindweed with a purple Flower.

7. IPOMOEA *foliis palmatis, floribus aggregatis. Flor. Zeyl.* 79. *Ipomoea* with Hand-ſhaped Leaves, and Flowers growing in Cluſters. *Volubilis Zeylanica pes tigrinus dicta. Hort. Elth.* 318. *Volubilis* of *Ceylon*, called Tyger's Foot.

8. IPOMOEA *foliis digitatis glabris, foliolis ſeſſilibus, caule lævi. Lin. Sp. Pl.* 162. *Ipomoea* with ſmooth Hand-ſhaped Leaves, whoſe Lobes ſit cloſe, and a ſmooth Stalk. *Convolvulus quinquefolius glaber Americanus. Pluk. Alm.* 116. Smooth five leaved *American* Bindweed.

The 1ſt Sort grows naturally in both *Indies*; in the *Weſt-Indies* it is called Sweet *William*, and by ſome *Indian* Pink. It riſes with a twining Stalk 7 or 8 Feet high, ſending out many ſlender twining Branches, which twiſt about any neighbouring Plants for Support; the Leaves are winged, being compoſed of ſeveral Pair of very fine narrow Lobes, not thicker than fine ſowing Thread; they are about an Inch long, of a deep green, and ſometimes are by Pairs oppoſite, and at others they are alternate; the Flowers come out ſingly from the Side of the Stalks, ſtanding on ſlender Foot Stalks about an Inch long; they are Funnel-ſhaped, having a Tube an Inch long, which is narrow at Bottom, but gradually widens to the Top, which ſpreads open flat, with 5 Corners or Angles; they are of a moſt beautiful ſcarlet Colour, ſo make a fine Appearance. This is an annual Plant in *England*, but whether it is ſo in its native Place I cannot tell; for as the Seeds fall to the Ground, there is a Succeſſion of young Plants, which continue flowering great Part of the Year.

This is a tender Plant, ſo will not thrive in the open Air in *England*; it is propagated by Seeds, which ſhould be ſown on a hot Bed in the Spring, and as the Plants will ſoon appear, they ſhould be each tranſplanted into a ſmall Pot filled with light Earth, before they twine about each other, for then it will be difficult to diſengage them without breaking their Tops. When they are potted, they ſhould be plunged into a new hot Bed, and Sticks placed down by each Plant for their Stalks to twine about; after they have taken new Root, they ſhould have a good Share of Air in warm Weather, to prevent their drawing up weak; and when they are advanced too high to remain under the Frame, they ſhould be removed into the Tan Bed in the Stove, where they ſhould have Support, for their Branches will extend to a conſiderable Diſtance. In this Place they will begin to flower in *June*, and there will be a Succeſſion of Flowers till the End of *September*, and the Seeds will ripen very well.

The 2d Sort grows naturally in *Carolina*, and the *Bahama Iſlands*; this is alſo an annual Plant in *England*, but is not ſo tender as the former. It hath a twining Stalk which riſes 5 or 6 Feet high, garniſhed with Heart-ſhaped Leaves ending in acute Points, and divided into Angles at their Baſe; the Flowers come out from the Side of the Branches, upon ſlender Foot Stalks which ſupport 3 or 4 Flowers of the ſame Form and Size as the former, but not ſo deep coloured. There is a Variety of this with Orange-coloured Flowers, but they do not differ in any other reſpect. If the Seeds of this Sort are ſown on a warm Border of light Earth in the Spring, the Plants will come up, and in favourable Seaſons will flower and produce good Seeds; but moſt People raiſe the Plants on a very gentle hot Bed, and tranſplant them afterwards into the Borders, by which Method they are brought forward, ſo will perfect their Seeds earlier.

The 3d Sort is like the 2d, but the Leaves have no Angles, and the Flowers are of a Roſe Colour, each Foot Stalk ſuſtaining 1 Flower. This may be treated as the ſecond Sort.

The 4th Sort grows naturally in the *Weſt-Indies*, where it twines about any neighbouring Support, and riſes 10 or 12 Feet high, garniſhed with large Heart-ſhaped entire Leaves; the Flowers come out from the Side of the Branches, upon ſlender Foot Stalks in Cluſters; they are of a blue Colour, and their Brims are not angular as in the former Species, but entire. This Sort is propagated by Seeds, which ſhould be ſown on a hot Bed in the Spring. and the Plants afterward treated as the firſt Sort, for it is too tender to thrive in the open Air here.

The 5th Sort is cultivated in moſt of the Iſlands in the *Weſt-Indies*, but is ſuppoſed to have been introduced there from the *Spaniſh* Main. Theſe Plants riſe to a very great Height, and ſend out many Branches, ſo are planted to cover Arbours for Shade in the Iſlands, from whence it had the Appellation of *Spaniſh Arbour Vine*. The Stalks of this Plant are covered with a purple Bark, they twine about any neighbouring Support, ſending out many Side Branches, ſo that one Plant will cover an Arbour of 50 Feet long. The Leaves are divided into 7 Lobes almoſt to the Bottom, the Flowers come out from the Sides of the Stalks, they are large, Funnel-ſhaped, of a bright yellow Colour, and ſmell very ſweet; theſe are ſucceeded by large roundiſh Capſules with 3 Cells, containing 1 large Seed in each, of a dark Colour.

This is a perennial Plant, but too tender to thrive in the open Air in *England*; the Seeds muſt be ſown on a hot Bed in the Spring, and when the Plants come up they muſt be tranſplanted into ſeparate Pots, and plunged into a freſh hot Bed; but as they will ſoon grow too tall to ſtand under a Frame, they ſhould be removed into the Bark Stove, where they muſt be ſupported, otherwiſe they will twine about all the neighbouring Plants. As theſe Plants extend their Shoots to a very great Length, they require a tall Stove, where they may have Room to grow, without which they will never produce any Flowers. I have had theſe Plants ſeveral Years, but have only ſeen 1 Flower produced from them; for they grow ſo very large before they begin to have Flowers, that few of the Stoves in *England* have Height enough for their Growth.

The 6th Sort grows naturally in moſt of the Iſlands in the *Weſt-Indies*; it hath a twining Stalk, which riſes 10 or 12 Feet high, garniſhed with Leaves divided into 3 Lobes, which are Heart-ſhaped; the Foot Stalks ariſe from the Side of the Stalks, each ſuſtaining 3 purple Flowers. This is alſo tender, ſo the Plants muſt be raiſed on a hot Bed in the Spring, and afterward planted in ſeparate Pots, plunging them into another hot Bed, where they may remain till they reach the Glaſſes, when they ſhould be removed into a Glaſs Caſe where they may have Room, and be ſcreened from the Cold, but ſhould have a large Share of free Air admitted to them in warm Weather; with this Treatment, the Plants will flower and produce ripe Seeds.

The 7th Sort grows naturally in *India*; this riſes with a twining hairy Stalk 4 or 5 Feet high, garniſhed with Hand-ſhaped Leaves which are hairy, and divided to the Bottom into ſeveral Lobes; the Flowers come out in Cluſters, incloſed in a five cornered Involucrum; they are of a purpliſh Colour, but ſmall, and open only in the Evening, ſo make no Figure. This is propagated by Seeds, and requires the ſame Treatment as the 6th Sort.

The 8th Sort grows naturally in the *Weſt-Indies*; this hath a ſmooth twining Stalk, which riſes 4 or 5 Feet high, garniſhed with Hand-ſhaped Leaves having 5 Lobes, which ſit cloſe to the Stalks; the Flowers come out from the Side of the Stalks upon ſhort Foot Stalks, which ſuſtain 2 or 3 purple Flowers, theſe are ſucceeded by round tricapſular Seed Veſſels, in each Cell there is 1 brown Seed.

This Sort requires the ſame Treatment as the 2 former, with which it will produce Flowers and perfect its Seeds in *England*.

IRIS. *Tourn. Inſt. R. H.* 358. *Tab.* 186, 187, 188. *Lin. Gen. Pl.* 57. Flower-de-luce; in *French*, *Flambe*.

The *Characters* are,

The Flowers are incloſed in Spathæ (or Sheaths) which are permanent; the Flowers are divided into 6 Parts, the 3 outer are oblong, obtuſe, and reflexed, the 3 inner are erect, and end in acute Points, theſe all join at their Baſe: They have 3 Awl-ſhaped Stamina, which lie upon the reflexed Petals, and are terminated by oblong depreſſed Summits. Under the Flower is ſituated an oblong Germen, ſupporting a ſlender Style, crowned by a large 3 pointed Stigma; the Germen becomes an oblong angular Capſule with 3 Cells, filled with large Seeds.

The *Species* are,

1. IRIS *corollis imberbibus, petalis interioribus ſtigmate minoribus, foliis enſiformibus. Hort. Cliff.* 19. *Iris* with an unbearded Flower, the inner Petals ſmaller than the Stigma, and Sword-ſhaped Leaves. *Iris paluſtris lutea. Tabern. Icon.* 643. Yellow Marſh Flower-de-luce.

2. IRIS *corollis barbatis, caule foliis longiore multifloro. Hort. Cliff.* 18. *Iris* with bearded Flowers, the Stalks longer than the Leaves, and having many Flowers. *Iris vulgaris Germanica ſive ſilveſtris. C. B. P.* 30. Common *German*, or wild Flower-de-luce.

3. IRIS *corollis barbatis, ſcapo nudo longitudine folio-*

rum multifloro. Prod. Leyd. 17. *Iris* with a bearded Flower, and a naked Stalk the Length of the Leaves, with many Flowers. *Iris latifolia, caule aphyllo. C. B. P.* 32. Broad leaved Flower-de-luce, whoſe Stalks are without Leaves.

4. Iris *corollis barbatis, caule ſubfolioſo longitudine foliorum multifloro. Prod. Leyd.* 17. *Iris* with a bearded Flower, and a leafy Stalk the Length of the Leaves, with many Flowers. *Iris latifolio Pannonica, colore multiplici. C. B. P.* 31. Broad leaved *Hungarian* Flower-de-luce of many Colours.

5. Iris *corollis barbatis, caule foliis longiore unifloro. Hort. Cliff.* 18. *Iris* with a bearded Flower, and a Stalk longer than the Leaves, having 1 Flower. *Iris ſuſiana, flore maximo ex albo nigricante. C. B. P.* 31. Flower-de-luce with a very large Flower of a black and white Colour, commonly called *Chalcedonian Iris.*

6. Iris *corollis barbatis, caule foliis breviore multifloro. Hort. Upſ.* 17. *Iris* with a bearded Flower, and a Stalk ſhorter than the Leaves, with many Flowers. *Iris humilis major, ſaturatè purpurea biflora. Tourn. Inſt.* 361. Greater Dwarf Flower-de-luce of a dark purple Colour, and having 2 Flowers on each Stalk.

7. Iris *corollis barbatis, caule foliis breviore unifloro. Lin. Sp. Pl.* 38. *Iris* with a bearded Flower, and a Stalk ſhorter than the Leaves with 1 Flower. *Iris humilis minor, flore purpureo. Tourn. Inſt.* 361. Smaller Dwarf Flower-de-luce with a purple Flower.

8. Iris *corollis barbatis, caule foliis longiore multifloro, foliis enſiformibus.* *Iris* with a bearded Flower, a Stalk longer than the Leaves with many Flowers, and Sword-ſhaped Leaves. *Iris Aſiatica cærulea polyanthos. C. B. P.* Blue *Aſiatick* Flower-de-luce with many Flowers, called greater *Dalmatian Iris.*

9. Iris *corollis barbatis, germinibus trigonis, foliis enſiformibus longiſſimis caule foliis longiore bifloro. Pluk.* 154. *Iris* with a bearded Flower, a three cornered Germen, very long Sword-ſhaped Leaves, and a Stalk longer than the Leaves with 2 Flowers.

10. Iris *corollis imberbibus, germinibus ſexangularibus, caule ancipiti, foliis linearibus. Hort. Cliff.* 19. *Iris* with Flowers having no Beards, a ſix cornered Germen, a Stalk having Flowers on both Sides, and narrow Leaves. *Iris anguſtifolia prunum redolens minor. C. B. P.* 33. Smaller narrow leaved Flower-de-luce ſmelling like Plums.

11. Iris *corollis imberbibus, caule foliis breviore trifloro, foliis lineari-enſiformibus.* *Iris* whoſe Flowers are not bearded, the Stalk ſhorter than the Leaves, having 3 Flowers, and narrow Sword-ſhaped Leaves. *Iris anguſtifolia maritima, major. C. B. P.* 33. Greater narrow leaved maritime Flower-de-luce.

12. Iris *corollis imberbibus, caule foliis æqualibus multifloro, ſpathâ majoribus erectis.* *Iris* whoſe Flowers have no Beards, the Stalks equal in Length with the Leaves, and having many Flowers larger and more erect than the Spatha. *Iris anguſtifolia, maritima minor. C. B. P.* Smaller narrow leaved maritime Flower-de-luce.

13. Iris *corollis imberbibus, caule foliis longiore multifloro, germinibus ſexangularibus, foliis linearibus.* *Iris* whoſe Flowers have no Beards, the Stalks longer than the Leaves with many Flowers, a ſix cornered Germen, and very narrow Leaves. *Iris anguſtifolia, bicolor. C. B. P.* 33. Narrow-leaved Flower-de-luce with 2 Colours.

14. Iris *corollis imberbibus, germinibus ſexangularibus, caule tereti, foliis ſublinearibus. Hort. Cliff.* 19. *Iris* whoſe Flowers have no Beards, with a ſix cornered Germen, a taper Stalk, and very narrow Leaves. *Iris pratenſis anguſtifolia, folio fœtido. C. B. P.* 32. Narrow leaved Meadow Flower-de-luce, with a ſtinking Leaf.

15. Iris *corollis imberbibus, ſpathâ bifoliâ, caule folioſo longitudine foliorum, pedunculis longioribus.* *Iris*, with Flowers having no Beards, a Sheath containing 2 Leaves, a leafy Stalk the Length of the Leaves, and longer Foot Stalks to the Flowers. *Iris ſativa lutea. C. B. P.* 32. Yellow Garden Flower-de-luce.

16. Iris *corollis imberbibus, caule longetudine foliorum multifloro, foliis enſiformibus.* *Iris* with an unbearded Flower, a Stalk the Length of the Leaves with many Flowers, and Sword-ſhaped Leaves. *Iris humilis minor, flore picto. Tourn. Inſt.* 362. Leſſer Dwarf Flower-de-luce with a painted Flower.

17. Iris *corollis imberbibus, caule unifloro foliis breviore, radice fibroſâ. Flor. Virg.* 10. *Iris* with an unbearded Flower, a Stalk ſhorter than the Leaves, with 1 Flower, and a fibrous Root. *Iris Virginiana pumila ſive chamæiris verna anguſtifolia, flore purpuro-cæruleo odorato. Pluk. Alm.* 196. Dwarf Spring *Virginia* Flower-de-luce, with a narrow Leaf, and a purple blue ſweet ſmelling Flower.

18. Iris *corollis imberbibus, germinibus ſubtrigonis, caule tereti, foliis enſiformibus. Lin. Sp. Pl.* 39. *Iris* with an unbearded Flower, a three cornered Germen, a taper Stalk, and Sword-ſhaped Leaves. *Iris Americana verſicolor ſtylo crenato. Dill. Hort. Elth.* 188. Party-coloured *American* Flower-de-luce, with a crenated Style.

19. Iris *corollis imberbibus petalis internis longitudine ſtigmatis, foliis enſiformibus. Hort. Cliff.* 19. *Iris* with an unbearded Flower, the inner Petals as long as the Stigma, and Sword-ſhaped Leaves. *Iris fœtidiſſima, ſeu Xyris. Tourn. Inſt.* 360. Moſt ſtinking Flower-de-luce, or *Xyris*, called Stinking Gladwyn.

20. Iris *corollis imberbibus, germinibus trigonis, caule tereti, foliis linearibus. Lin. Hort. Cliff.* 19. *Iris* with an unbearded Flower, a three cornered Germen, a taper Stalk, and narrow Leaves. *Iris pratenſis, anguſtifolia non fœtida altior. C. B. P.* 32. Taller narrow leaved Meadow Flower-de-luce, not ſtinking.

21. Iris *corollis imberbibus, foliis tetragonis. Vir. Cliff.* 6. *Iris* with an unbearded Flower and four cornered Leaves. *Hermodactylus folio quadrangulo. Tourn. Cor.* 50. Hermodactyle with a four cornered Leaf.

The 1ſt Sort grows naturally in Ditches and ſtanding Waters in moſt Parts of *England*, this is titled in the *Pharmacopeia*, *Acorus adulterinus*, or *Pſeudo acorus*, Baſtard Acorus. The Roots of this are pretty thick, fleſhy, and ſpread every Way near the Surface of the Ground; the Leaves are Sword-ſhaped, very long, of a deep green Colour, and not ſo ſtiff as thoſe of the Garden *Iris*; the Stalks riſe from 3 to near 4 Feet high, toward the Top of which, grow 3 or 4 Flowers, one above another, which gradually ſucceed each other; they are ſhaped like the ordinary Flower-de-luce, but the 3 inner Petals are leſs than the Stigmas, ſo they want the 3 upright Petals which are termed Standards. Theſe appear in *June*, and are ſucceeded by large 3 cornered Capſules, containg 3 Rows of flat Seeds.

This Sort is not cultivated in Gardens, but being an officinal Plant, it is here mentioned to introduce the other.

The 2d Sort grows naturally in *Germany*, but has been long cultivated in the *Engliſh* Gardens for Ornament; the Roots are very thick, fleſhy, and divided into Joints, ſpreading juſt under the Surface of the Ground; they are of a browniſh Colour on their Outſide, but white within; the Leaves ariſe in Cluſters embracing each other at their Baſe; but ſpread aſunder upward in Forms of Wings; they are a Foot and a Half long, and 2 Inches broad, having ſharp Edges ending in Points like Swords; the Stalks between theſe, which are a little longer than the Leaves, having at each Joint 1 Leaf without Foot Stalk; theſe diminiſh in their Size upward, the Stalks divide into 3 Branches, each of which produce 2 or 3 Flowers one above another at Diſtances, incloſed in a Sheath; they have 3 large Violet-coloured Petals which turn backward, and are called Falls; theſe have Beards near an Inch long on their Mid-rib toward their Baſe, and have a ſhort arched Petal which covers the Beard, with 3 broad erect Petals of the ſame Colour, called Standards; the Stamina lie on the reflexed Petals. Under each Flower is ſituated an oblong Germen, which turns to a large three cornered Capſule with 3 Cells, filled with large compreſſed Seeds. This flowers in *June*, and the Seeds ripen in *Auguſt*.

There is a Variety of this with blue Standards and purple Falls, titled, *Iris hortenſis latifolia*, by *Caſpar Bauhin*; and one with pale purple Standards, another with white, and a third a ſmaller Flower, but theſe are accidental Varieties from Seeds.

The 3d Sort has broader Leaves than the laſt, the Stalks have no Leaves upon them, are equal in Length with the Leaves; they have 3 or 4 large bright purple Flowers, which ſtand above each other, having purpliſh Sheaths or Hoods; the 3 bending Petals or Falls are ſtriped with white, from the Baſe to the End of the Beard; the Flowers are ſucceeded by large blunt triangular Capſules with 3 Cells, filled with compreſſed Seeds. It flowers the latter End of *May*, and the Seeds ripen in the Beginning of *Auguſt*.

The 4th Sort grows naturally in *Hungary*; the Leaves are like thoſe of the 2d Sort, but are of a darker green; the Stalks riſe as tall as the Leaves, and toward the Bottom are garniſhed with 1 Leaf at each Joint, whoſe Baſe embraces the Stalks; the upper Part is naked, and branches into three, each having 2 or 3 Flowers above one another; the 3 upright Petals or Standards are yellow, and the bending Petals or Falls are variegated with purple Stripes. This flowers in *June*, but is rarely ſucceeded by Seeds in *England*.

The 5th Sort grows naturally near *Conſtantinople*, and in other Parts of the Eaſt. The Leaves of this Sort are not ſo broad as thoſe of the ſecond, and are of a grayiſh Colour; the Stalks riſe 2 Feet and a Half high, ſupporting 1 very large Flower; the 3 upright Petals are almoſt as broad as a Hand but very thin, of a mixed ſtriped black and white; the 3 bending Petals or Falls are of a darker Colour, from whence ſome Gardeners have called it the Mourning *Iris*. This flowers the latter End of *May*, or the Beginning of *June*, but never has any Seeds in *England*.

The 6th Sort hath broad Leaves like thoſe of the 2d Sort, but ſhorter; the Stalks riſe 9 or 10 Inches high, branching into 2 or 3 at the Top, each ſuſtaining 2 deep purple Flowers. This flowers in *May*, but is not ſucceeded by Seeds in *England*.

The 7th Sort hath narrower and ſhorter Leaves than the former; the Stalks are ſhorter than the Leaves, and ſupport 1 Flower on the Top of a light purple Colour. This flowers the Beginning of *May*, but rarely produces Seeds in this Country. There are 2 or 3 Varieties of this, which differ in the Colour of their Flowers.

The 8th Sort hath the largeſt Leaves of any of the Flower-de-luce, they are of a grayiſh Colour and ſpread wide, embracing each other at their Baſe, where they are purpliſh. The Stalks riſe near 4 Feet high, and divide into ſeveral Branches, each ſupporting 3 or 4 Flowers above each other at Diſtances, covered with a thin Sheath; the 3 bending Petals or Falls, are of a faint purple inclining to blue, with purple Veins running lengthways; the Beard is yellow, and the 3 erect Petals or Standards are of a bright blue with ſome faint purple Stripes, the Flowers have an agreeable Scent. They appear the latter End of *June*, but are ſeldom ſucceeded by Seeds in *England*.

The Seeds of the 9th Sort were brought from *Carniola*, by the Right Rev. Dr. *Pocock* Biſhop of *Oſſory*, who found the Plants growing there naturally: Theſe were ſown in the *Chelſea* Garden, where they ſucceeded very well, and the Plants have been ſeen ſince communicated to many curious Gardens in *Europe*.

This Plant hath a thick fleſhy Root, divided into many Knots or Tubers, which ſpread and multiply in the Ground; theſe ſend out many ſtrong thick fleſhy Fibres, which ſtrike deep in the Earth, putting out ſeveral ſmaller Fibres from their Sides. From theſe Roots ariſe Cluſters of flat Sword-ſhaped Leaves of a deep green Colour, more than 3 Feet long, and little more than 1 Inch broad in the broadeſt Part, ending in Points; theſe Leaves are connected together at their Baſe into ſeveral Heads or Bundles, wrapping over each other; and between theſe ariſe the Flower Stalks, which grow 4 Feet high, and are jointed, having very long Spathæ or Sheaths at each of the upper Joints, which include the Flowers. Theſe Stalks generally ſuſtain 2 Flowers, 1 coming out of each Sheath or Spatha; theſe are permanent, and when the Flowers are paſt, cloſely cover the Seed Veſſel. The Flowers are divided into 9 Leaves, 3 of theſe ſtand erect, which are white, and 6 turn down; theſe are joined together at their Baſe, the lower ſpreading out into a broad, obtuſe, reflexed Fall, having a Beard, of a bright yellow Colour; the upper Segment is arched over the lower, ſo as to form a Sort of Lip, reflexed backward; under theſe is ſituated an oblong three cornered Germen, which afterward becomes an oblong, ſwollen, three cornered Seed Veſſel, ending in a long Point, which opens into 3 longitudinal Cells, in which the Seeds are ranged; theſe are angular and compreſſed. This Plant flowers the latter End of *June*, or Beginning of *July*, and the Seeds

Seeds ripen in Autumn. It is very hardy and thrives well in the open Air without any Protection. The Leaves decay to the Root in Autumn, and new ones ariſe in Spring. The Roots alſo propagate very faſt, when in a light moiſt Soil, ſo that it may ſoon be had in Plenty, without waiting for Plants from Seeds.

The 10th Sort grows naturally in *Auſtria*; this hath narrow flat Graſs-like Leaves about a Foot long, of a light green Colour; between theſe ariſe the Stalks about 6 Inches high, having 2 narrow green Leaves, much longer than the Stalks; theſe Stalks ſuſtain 2 or 3 Flowers, ſmaller than any of the former Species; the Petals have no Beards, but have a broad yellow Line adorned with purple Stripes; the 3 Falls are of a light purple Colour ſtriped with blue, and have a convex Ridge running longitudinally, the other are of a reddiſh purple variegated with violet; theſe have a Scent like freſh Plums. It flowers in *July*, and is ſucceeded by Seed Veſſels which are ſhort, having 3 Borders or Wings running lengthways, opening in 3 Cells, filled with angular Seeds, which ripen in *September*.

The 11th Sort grows naturally near the Sea, in the South of *France* and in *Italy*. This hath narrow Sword-ſhaped Leaves more than a Foot long, of a deep green Colour; the Stalks do not riſe ſo tall as the Leaves, they ſuſtain at the Top 2 or 3 Flowers which ſtand near together; they are of a bright purple Colour with very deep Falls, and the 3 Standards are blue; the bending Petals have no Beards, but inſtead of that white broad Stripes through the Middle. This flowers in *July*, and the Seeds ripen in *September*.

The 12thSort hath narrower Leaves than the former, but of the ſame deep green Colour; the Stalks do not riſe higher than the Leaves, and ſupport 2 or 3 Flowers, which have long permanent Empalements ſtanding erect, which cover the Seed Veſſel till the Seeds are ripe; the Flowers are ſmaller, and of a paler Colour than thoſe of the eleventh Sort.

The 13th Sort has very narrow long Graſs-like Leaves, of a light green; the Stalks riſe 2 Feet and a Half high, ſuſtaining 3 or 4 Flowers above each other, which have blue Falls, and purple Standards ſtriped with pale blue Lines. This flowers in *July*, and the Seeds ripen at *Michaelmas*.

The 14th Sort grows naturally in *Germany*; this hath Leaves like thoſe of the 11th Sort, which, when broken, have a diſagreeable Scent; but this is accidental, and not common to all the Plants; the Stalks of this are taper, and riſe a little above the Leaves; theſe ſuſtain 3 or 4 Flowers one above another, which have light blue Standards, and purple variegated Falls without Beards; inſtead of which, they have a broad white Line in the Middle; theſe are ſucceeded by ſhort thick Capſules, which have ſcarce any Angles, opening in 3 Cells, filled with angular Seeds. It flowers in *July*, and the Seeds ripen in *September*.

The 15th Sort has narrower Leaves than thoſe of the ſecond, of a pale green Colour, and not ſo ſtiff; the Stalks are equal in Height with the Leaves, and branch out on both Sides, with long Foot Stalks, each ſuſtaining 1 pretty large yellow Flower, incloſed in a long 2 leaved Sheath; at each Joint where the Foot Stalks come out, there is a ſingle Leaf, which embraces the Stalks with their Baſe. This flowers in *June*, but rarely produces Seeds in this Country.

There are 2 Varieties of this Sort, one with a Sulphur-coloured, the other with a variegated Flower, which are ſuppoſed to be only Varieties accidentally produced from Seeds.

The 16th Sort hath broad Sword-ſhaped Leaves about 8 Inches long; the Stalks riſe about the ſame Height with the Leaves, and divide into 2 or 3 Foot Stalks, each ſuſtaining 2 or 3 Flowers one above another, which have yellow Standards, and the Falls are variegated with dark Stripes. This flowers in *June*, but does not produce Seeds here.

The 17th Sort grows naturally in *North America*; this hath tufted fibrous Roots, from which ariſe many Graſs-like Leaves about 9 Inches long; from between theſe come out the Stalks, ſhorter than the Leaves; ſupporting 1 purple Flower with blue Standards. This Sort flowers in *May*, but ſeldom produces Seeds in *England*.

The 18th Sort grows alſo in *North America*; this hath narrow Sword-ſhaped Leaves about a Foot long, of a light green Colour; the Stalks riſe a little above the Leaves, they are taper, and ſupport 2 or 3 Flowers one above another; the Standards are of a light blue, and the Falls are purple variegated, with a broad white Line inſtead of a Beard through the Middle. The Germen which is ſituated under the Flower is three cornered below, but taper toward the Top. This flowers in *June*, and often produces Seeds here.

The 19th Sort grows naturally in moiſt Places in many Parts of *England*, ſo is ſeldom admitted into Gardens. This hath thick tufted fibrous Roots, the Leaves are of a Graſs green Sword-ſhaped, and when broken emit a ſtrong Odour, not much unlike that of hot roaſt Beef at the firſt Scent, but if ſmelt too cloſe, becomes diſagreeable. It is generally called ſtinking Gladwyn in *England*, the Stalks riſe about the ſame Height with the Leaves, ſupporting 2 ſmall Flowers of a purple Colour, variegated. It flowers in *June*, and the Seeds ripen in the Autmn.

The 20th Sort grows naturally in *Auſtria* and *Bohemia*; this hath narrow Sword-ſhaped Leaves near a Foot and a Half long, of a dark green Colour; the Flower Stalks riſe above the Leaves, and ſupport 2 or 3 Flowers with light blue Standards, and deep blue Falls, with a broad Stripe of white, inſtead of the Beard. This flowers in *July*, and the Seeds ripen in *September*.

There are ſeveral Varieties of theſe Flag or Sword-leaved *Iriſes*, which chiefly differ in the Colour of their Flowers, ſo are not to be regarded as diſtinct Sorts; thoſe here enumerated are ſuppoſed to be different Species, great Part of them I have cultivated by Seeds, and found them conſtantly produce the ſame as the Parent Plants.

All theſe Sorts are generally propagated by parting their Roots, which do moſt of them multiply faſt enough. The beſt Time to remove and part the Roots is in Autumn, that they may get good Root before the Spring, otherwiſe they will not flower ſtrong the following Summer. All thoſe Sorts which ſpread much at their Roots, ſhould be tranſplanted every other Year, to keep them within Bounds, otherwiſe they will ſpread ſo much as to become troubleſome, eſpecially if planted near other

Flowers; indeed the large growing Kinds are moſt of them too ſpreading for the Flower Garden, ſo are only fit to fill up the Spaces between Trees and Shrubs in large Plantations, where they will have a good Effect during the Time of their flowering.

The 5th, 6th, 7th, 10th, 11th, 16th, 17th, and 18th Sorts, grow in leſs Compaſs, ſo may be admitted into the large Borders, or in Clumps of Flowers in the Pleaſure Garden, where they will add to the Variety. The 5th Sort ſhould have a warmer Situation, being a little tender, but all the other Sorts will grow in almoſt any Soil, or Situation; theſe may all be propagated by Seeds, which ſhould be ſown ſoon after they are ripe, then the Plants will come up the following Spring; but if the Seeds are ſown in Spring, they will lie a Year in the Ground before they vegetate; when the Plants come up, they muſt be kept clean from Weeds, and the following Autumn ſhould be tranſplanted into Beds at 10 Inches or a Foot Diſtance, where they may remain till they flower, which will be the ſecond Summer after tranſplanting, but as moſt of the Sorts are ſo eaſily propagated by their Roots, few People care to wait for ſeeding Plants, unleſs of thoſe Sorts which are ſcarce.

The 21ſt Sort grows naturally in the Iſlands of the *Archipelago*; this hath a tuberous knobbed Root, from which ariſe 5 or 6 long, narrow, four cornered Leaves, between which ariſe the Stalk, which ſupports one Flower, ſhaped like thoſe of the *Iris*, but ſmall, and of a dark purple Colour. This flowers in *April*, but does not produce Seeds in *England*. It is propagated by the Roots, which ſend out Offſets; theſe may be taken up, and tranſplanted when their Leaves decay, but ſhould not be kept too long out of the Ground. If theſe are planted in a deep looſe Soil, the Roots will run down, and be loſt in a few Years where they are not diſturbed, ſo they ſhould be annually tranſplanted, and have a ſhallow Soil; they are hardy in Reſpect to Cold, and require no farther Care but to keep them clean from Weeds.

IRIS bulboſa. } *See* Xiphium.
IRIS Perſica. }

ISATIS. *Tourn. Inſt. R. R.* 211. *Tab.* 100. *Lin. Gen. Pl.* 738. Woad; in *French*, *Paſtel*.

The *Characters* are,

The Empalement of the Flower is compoſed of 4 oval coloured Leaves, which ſpread open, and fall away. The Flower hath 4 oblong Petals, placed in Form of a Croſs, narrow at their Baſe, but broad and obtuſe at their Ends. It hath 6 Stamina, 4 of which are as long as the Petals, the other 2 are ſhorter; theſe are terminated by oblong lateral Summits. It has an oblong compreſſed Germen, the Length of the 2 ſhorter Stamina, crowned by an obtuſe Stigma. The Germen becomes an oblong compreſſed Pod, with 1 Cell, opening with 2 Valves, incloſing 1 oval compreſſed Seed in the Center.

The *Species* are,

1. Isatis *foliis radicalibus oblongo-ovatis obtuſis integerrimis, caulinis ſagittatis ſiliculis oblongis.* Woad with oblong, oval, blunt, entire Leaves at Bottom, but thoſe on the Stalks Arrow-pointed, and oblong Pods. *Iſatis ſativa vel latifolia. C. B. P.* 113. Broad leaved cultivated Woad.

2. Isatis *foliis radicalibus lanceolatis integerrimis, caulinis ſagittatis, ſiliculis anguſtioribus.* Woad with Spear-ſhaped entire lower Leaves, thoſe on the Stalks Arrow-ſhaped, and narrower Pods. *Iſatis ſylveſtris vel anguſtifolia. C. B. P.* 113. Wild narrow leaved Woad.

3. Isatis *foliis radicalieus lanceolatis crenatis, caulinis lineari-ſagittatis, ſiliculis brevioribus emarginatis.* Woad with Spear-ſhaped lower Leaves, ſlightly crenated; thoſe on the Stalks very narrow, and Arrow-pointed, and ſhorter indented Pods. *Iſatis Dalmatica major. Bobart.* Greater Woad of *Dalmatia*.

4. Isatis *foliis radicalibus crenatis, caulinis ſagittatis, ſiliculis anguſtioribus villoſis.* Woad with crenated lower Leaves, thoſe on the Stalks Arrow-pointed, and narrow hairy Pods. *Iſatis ſylveſtris, minor Luſitanica. H. L. App.* Smaller wild *Portugal* Woad.

The 1ſt Sort is cultivated in ſeveral Parts of *England*, for Dying, for it is uſed as a Foundation for many of the dark Colours.

This is a Commodity well worth propagating in all Places where the Land is ſuitable for it, which muſt be a pretty ſtrong Soil, but not too moiſt.

This Plant is biennial, in which it differs from moſt of the other Sorts, which are annual. The lower Leaves of this are of an oblong oval Figure, and pretty thick Conſiſtence; they are narrow at their Baſe, but broad above, and end in obtuſe roundiſh Points; they are entire on their Edges, and of a lucid green. The Stalks riſe near 4 Feet high, dividing into ſeveral Branches, garniſhed with Arrow-ſhaped Leaves, ſitting cloſe to the Stalks; the Ends of the Branches are terminated by ſmall yellow Flowers, in very cloſe Cluſters, compoſed of four ſmall Petals, placed in Form of a Croſs; theſe are ſucceeded by Pods ſhaped like a Bird's Tongue, half an Inch long, and one Eighth of an Inch broad, which, when ripe, turn black, and open with 2 Valves, having 1 Cell, in which is ſituated a ſingle Seed. It flowers in *July*, and the Seeds ripen the Beginning of *September*.

The 2d Sort has been ſuppoſed to be the ſame Species as the firſt, and only differing by Culture; but I have propagated both Sorts more than 30 Years, and have not found either of them alter; there are alſo very eſſential Differences between the 2 Plants, the firſt is the Shape of the under Leaves, which in the wild Sort are narrow and Spear-ſhaped, and thoſe on the Stalks are not more than half the Breadth of thoſe of the cultivated Woad. The Stalks do not branch ſo much, and the Pods are narrower than thoſe of the other Sort, nor do the Roots abide ſo long, for they generally die the ſame Year.

The 3d Sort grows naturally in *Dalmatia*; this is a biennial Plant; the lower Leaves are Spear-ſhaped, and crenated on their Edges, but thoſe on the Stalks are very narrow, and Arrow pointed. The Stalks branch more than thoſe of the 1ſt Sort, and riſe higher. The Flowers are larger, and of a brighter yellow Colour. The Seed Veſſels are ſhorter, and broader at their Ends, which are indented. Theſe Plants all flower in *July*, and their Seeds ripen in *September*.

The 4th Sort grows naturally in *Portugal*; it is an annual Plant, whoſe lower Leaves are narrow and crenated, but thoſe on the Stalks are Arrow pointed; they are of a pale green, and much thinner than thoſe of the other Sorts. The Flowers are ſmall, of a Sulphur Colour, and the Seed Veſſels are narrow and hairy.

The 3 laſt Sorts are not cultivated for Uſe, ſo are only preſerved in Botanick Gardens for Variety; they are propagated by Seeds, which ſhould be ſown in Autumn, and when the Plants come up, they muſt be thinned, leaving them ſix Inches a-part, and afterward kept clean from Weeds; the Summer following they will flower and produce ripe Seeds, after which the 2d and 4th Sorts ſoon decay, but the Roots of the 1ſt and 3d Sorts will live another Year.

The 1ſt Sort which is propagated for Uſe, is ſown upon freſh Land in good Heart, for which the Cultivators of Woad pay a large Rent; they generally chooſe to have their Land ſituated near great Towns, where there is Plenty of Dreſſing, but they never ſtay long on the ſame Spot, for the beſt Ground will not admit of being ſown with Woad more than twice, and if it is oftener repeated, the Crop ſeldom pays the Charges of Culture, *&c.*

Thoſe who cultivate this Commodity, have Gangs of People who have been bred to this Employment, ſo that whole Families travel about from Place to Place, where-ever their Principal fixes on Land for the Purpoſe, but theſe People go on in one Track, juſt as their Predeceſſors taught them, nor have their Principals deviated much from the Practice of their Anceſtors, ſo that there is a large Field for Improvement, if any of the Cultivators of Woad were Perſons of Genius, and could be prevailed on to introduce the Garden Culture ſo far as it may be adapted to this Plant; this I know from Experience, having made Numbers of Trials on the Culture of this Plant, therefore I ſhall inſert them here for the Benefit of thoſe who may have Ingenuity enough to ſtrike out of the old beaten Track.

As the Goodneſs of Woad conſiſts in the Size and Fatneſs of the Leaves, the only Method to obtain this, is by ſowing the Seed upon Ground at a proper Seaſon, and allow the Plants proper Room to grow, as alſo to keep them clean from Weeds, which, if permitted to grow, will rob the Plants of their Nouriſhment. The Method practiſed by ſome of the moſt ſkilful Kitchen Gardeners in the Culture of Spinach, would be a great Improvement to this Plant, for ſome of them have improved the round leaved Spinach ſo much by Culture, as to have the Leaves more than ſix Times the Size they were formerly, and their Fatneſs has been in the ſame Proportion, upon the ſame Land, which has been effected by thinning the Plants when young, and keeping the Ground conſtantly clean from Weeds; but to return to the Culture of Woad.

After having made Choice of a proper Spot of Land, which ſhould not be too light and ſandy, nor over ſtiff and moiſt, but rather a gentle Hazel Loam, whoſe Parts will eaſily ſeparate; the next is to plough this up juſt before Winter, laying it in narrow high Ridges, that the Froſt may penetrate through the Ridges, to mellow and ſoften the Clods; then in the Spring plough it again Croſsway, laying it again in narrow Ridges; after it has lain ſome Time in this Manner, and the Weeds begin to grow, it ſhould be well harrowed to deſtroy them; this ſhould be twice repeated while the Weeds are young, and if there are any Roots of large perennial Weeds, they muſt be harrowed out, and carried off the Ground. In *June* the Ground ſhould be a third Time ploughed, when the Furrows ſhould be narrow, and the Ground ſtirred as deep as the Plough will go, that the Parts may be as well ſeparated as poſſible, and when the Weeds appear again, the Ground ſhould be well harrowed to deſtroy them. Toward the End of *July*, or the Beginning of *Auguſt*, it ſhould be ploughed the laſt Time, when the Land ſhould be laid ſmooth, and when there is a Proſpect of Showers, the Ground muſt be harrowed to receive the Seeds, which ſhould be ſown either in Rows with the Drill Plough, or in Broad-caſt after the common Method, but it will be proper to ſteep the Seeds one Night in Water before they are ſown, which will prepare them for Vegetation, if the Seeds are ſown in Drills with a Plough, they will be covered by an Inſtrument fixed to the Plough for that Purpoſe, but thoſe which are ſown Broad-caſt in the common Way, muſt be well harrowed in. If the Seeds are good, and the Seaſon favourable, the Plants will appear in a Fortnight, and in a Month or 5 Weeks will be fit to hoe; for the ſooner this is performed when the Plants are diſtinguiſhable, the better they will thrive, and the Weeds being then young, will be ſoon deſtroyed. The Method of hoeing theſe Plants, is the ſame as for Turneps, with this Difference only, that theſe Plants need not be thinned ſo much, for at the firſt hoeing, if they are ſeparated to the Diſtance of 3 or 4 Inches, and at the laſt to 6 Inches, it will be Space enough for the Growth of them; if this is carefully performed, and in dry Weather, moſt of the Weeds will be deſtroyed, but as ſome of them may eſcape in this Operation, and young Weeds will ariſe, the Ground ſhould be a ſecond Time hoed in *October*, always chooſing a dry Time for this Work; at this ſecond Operation the Plants ſhould be ſingled out to the Diſtance they are to remain. After this the Ground will be clean from Weeds till the Spring, when young Weeds will come up, therefore about a Fortnight in *April* will be a good Time to hoe the Ground again, when the Weeds will be young; it may be performed in leſs than half the Time it would require if the Weeds were permitted to grow large, and the Sun and Wind will much ſooner kill them; this hoeing will alſo ſtir the Surface of the Ground, and greatly promote the Growth of the Plants; if this is performed in dry Weather, the Ground will be clean till the firſt Crop of Woad is gathered, after which it muſt be again well cleaned, if this is carefully repeated, after gathering each Crop, the Land will always lie clean, and the Plants will thrive the better. The Expence of the firſt Hoeing will be about 6 Shillings *per* Acre, and for the after Hoeings half that Price will be ſufficient, provided they are performed when the Weeds are young, for if they are ſuffered to grow large, it will require more Labour, nor can it be ſo well performed.

If the Land, in which this Seed is ſown, ſhould have been in Culture before for other Crops, ſo not in good Heart, it will require Dreſſing before it is ſown, in which Caſe rotten Stable Dung is preferable to any other, but this ſhould not be laid on till the laſt Ploughing before the Seeds are ſown, and not ſpread but as Land is ploughed, that the Sun may not exhale the Goodneſs of it, which in Summer is ſoon loſt, when ſpread on the Ground. The Quantity ſhould not be leſs than 20 Loads to each Acre, which will keep the Ground in Heart till the Crop of Woad is ſpent.

The Time for gathering the Crop is according to the Seaſon, but it ſhould be performed as ſoon as the Leaves are fully grown, while they are perfectly green, for when they begin to change pale, great Part of their Goodneſs is over, for the Quantity will be leſs, and the Quality greatly diminiſhed.

If the Land is good, and the Crop well huſbanded, it will produce 3 or 4 Gatherings, but the two firſt are the beſt; theſe are commonly mixed together in manufacturing it, but the after Crops are always kept ſeparate, for if theſe are mixed with the other, the whole will be ſpoiled. The two firſt Crops will ſell from 25 to 30 Pounds a Ton, but the latter will not bring more than 7 or 8 Pounds, and ſometimes not ſo much. An Acre of Land will produce a Ton of Woad, and in good Seaſons near a Ton and a Half.

When the Planters intend to ſave the Seeds, they cut 3 Crops of the Leaves, and then let the Plants ſtand till the next Year for Seed, but if only one Crop is cut, and that only of the outer Leaves, letting all the Middle Leaves ſtand to nouriſh the Stalks, the Plants will grow ſtronger, and produce a much greater Quantity of Seeds.

Theſe Seeds are often kept 2 Years, but it is always beſt to ſow new Seeds when they can be obtained. The Seeds ripen in *Auguſt*, when the Pods turn to a dark Colour the Seeds ſhould be gathered; it is beſt done by reaping the Stalks as Wheat, and ſpreading them in Rows upon the Ground, and in 4 or 5 Days the Seeds will be fit to threſh out, provided the Weather is dry; for if it lies long, the Pods will open and let out the Seeds.

There are ſome of the Woad Planters, who feed down the Leaves in Winter with Sheep, which is a very bad Method, for all Plants which are to remain for a future Crop, ſhould never be eaten by Cattle, for that greatly weakens them, therefore thoſe who eat down their Wheat in Winter with Sheep, are equally blameable.

ISOPYRUM. *Lin. Gen Pl.* 621. *Helleborus. Amman.*

The *Characters* are,

The Flower has no Empalement. It hath 5 oval Petals, which are equal, and fall off, and 5 ſhort tubulous Nectaria, ſituated within the Petals, divided at their Brim into 3 Lobes; the Middle one being the largeſt. It hath a great Number of ſhort hairy Stamina, terminated by ſingle Summits. and ſeveral oval Germina with ſingle Styles of their own Length, crowned by obtuſe Stigmas the Length of the Stamina. The Germina become ſo many recurved Capſules with 1 Cell filled with ſmall Seeds.

The *Species* are,

1. ISOPYRUM *ſtipulis ſubulatis, petalis acutis. Hort. Upſ.* 157. *Iſopyrum* with Awl-ſhaped Stipulæ, and acute Petals. *Helleborus fumariæ foliis. Amman. Ruth.* 57. *Tab.* 12. Hellebore with Fumitory Leaves.

2. ISOPYRUM *ſtipulis ovatis, petalis obtuſis. Lin. Sp. Pl.* 557. *Iſopyrum* with oval Stipulæ, and obtuſe Petals. *Ranunculus nemoroſus, thalictri folio. C. B. P.* 178. Wood Crowsfoot with a Meadow Rue Leaf.

3. ISOPYRUM *ſtipulis obſoletis. Lin. Sp. Pl.* 557. *Iſopyrum* with obſolete Stipulæ. *Aquilegia montana, flore parvo, thalictri folio. C. B. P.* 144. Mountain Columbine with a ſmall Flower, and Meadow Rue Leaf.

The 1ſt Sort grows naturally in *Siberia*, from whence the Seeds were ſent to the imperial Garden at *Peterſburgh*, and the late Dr. *Amman*, Profeſſor of Botany there, ſent me part of the Seeds; this is an annual Plant, which ſeldom riſes more than 3 or 4 Inches high. The Leaves are ſhaped like thoſe of Fumitory; they are ſmall, and of a gray Colour. The Stalk is naked to the Top, where there is a Circle of Leaves juſt under the Flowers. The Flowers are ſmall, of an herbaceous Colour on their Outſide, but yellow within, having 5 acute Petals, and as many honey Glands, with a great Number of Stamina, ſhorter than the Petals, and ſeveral reflexed Moon-ſhaped Germina, having ſo many ſingle Styles, crowned by obtuſe Stigmas. The Flowers are ſucceeded by many recurved Seed Veſſels with 1 Cell, filled with ſmall ſhining black Seeds. It flowers the Beginning of *April*, and the Seeds ripen in *May*, then the Plants decay.

The Seeds of this Plant ſhould be ſown in a ſhady Border, ſoon after they are ripe, for when they are kept long out of the Ground, they ſeldom grow the firſt Year; therefore, when the Seeds are permitted to ſcatter, they ſucceed very well, and require no other Care but to keep them clean from Weeds; as there is no great Beauty in this Plant, a ſmell Patch or two of them in any ſhady Part of the Garden, for Variety, will be ſufficient.

The 2d and 3d Sorts were ſent me from *Verona*, near which place they grow naturally. The 2d Sort hath Leaves very like thoſe of the ſmalleſt Meadow Rue. The Stalks riſe 4 or 5 Inches, ſupporting a few ſmall white Flowers, with obtuſe Petals; theſe are ſucceeded by ſeveral recurved Seed Veſſels, containg many ſmall Seeds. It flowers the latter End of *March*, and the Seeds ripen in *May*.

The 3d Sort hath Leaves like the 2d, but a little larger, and of a greener Colour. The Stalks riſe about 6 Inches high, ſupporting 2 or 3 ſmall white Flowers, ſhaped like thoſe thoſe of the 2d Sort; theſe are ſucceeded by recurved Seed Veſſels, filled with ſmall Seeds. It flowers in *April*, and the Seeds ripen in *June*.

Both theſe Plants delight in a moiſt ſhady Situation; they are propagated by Seeds as the firſt Sort, but they will live two or three Years.

ISORA. *See* Helicteres.

ITEA. *Lin. Gen. Pl.* 243. *Flor. Virg.* 143. *Diconangia. Mitch. Gen.* 5.

The *Characters* are,

The Empalement of the Flower is ſmall, permanent, and erect, ending in 5 acute Points. The Flower has 5 Petals, inſerted in the Empalement. It hath 5 Awl ſhaped Stamina inſerted in the Empalement, as long as the Petals, terminated by roundiſh Summits, and an oval Germen ſupporting a cylindrical Style, which is permanent, crowned by an obtuſe Stigma. The Germen becomes a long oval Capſule, with the Style at the Top, having 1 Cell filled with ſmall Seeds.

We have but one *Species* of this Genus, *viz.*

ITEA. *Flor. Virg:* 143. We have no *Engliſh* Title for this Plant.

This Shrub grows in moiſt Soils in ſeveral Parts of *North America*, where it riſes to the Height of 6 or 7 Feet, ſending out many Branches on every Side, from the Ground upward, garniſhed with Spear-ſhaped Leaves, placed alternately; they are ſlightly ſawed on their Edges, reflexed, veined, and of a light green. At the Extremity of the ſame Year's Shoots, in the Month of *July*, are produced fine Spikes of white Flowers, 3 or 4 Inches long, and erect; when theſe Shrubs are in Vigour, they will be entirely covered with theſe Spikes of Flowers, ſo that they make a fine Appearance at their Seaſon of flowering.

At preſent this Shrnb is not very common in *England*; the only Garden where I have ſeen it in Vigour, is that of his Grace the Duke of *Argyle*, at *Whitton*, near *Hounſlow*, where the Soil agrees ſo well with it, that it thrives and flowers there as well as in its native Country.

This Shrub will live in the open Air in *England*, the Cold never injuring it, but it will not thrive upon dry gravelly Ground, being very apt to die in ſuch Places in the Summer Seaſon. It is propagated by Layers, but as theſe are commonly 2 Years before they take Root, it cannot be propagated in ſuch Plenty as were to be wiſhed; for as this Shrub flowers at a Seaſon when there are few others in Beauty, it is the more valuable.

JUDAICA ARBOR. *See* Cercis.

JUGLANS. *Lin. Gen. Pl.* 950. *Nux. Tourn. Inſt. R. H.* 581. *Tab.* 346. Walnut; in *French*, *Noiſetier*.

The *Characters* are,

It hath male and female Flowers at Diſtances on the ſame Tree. The male Flowers are diſpoſed in an oblong Rope, or Katkin, which is cylindrical and imbricated, with Spaces between the Scales, each Scale has 1 Flower, with 1 Petal fixed in the outer Center, toward the Outſide of the Scale. The Petal is divided into 6 equal Parts; in the Center is ſituated many ſhort Stamina, terminated by erect acute Summits. The female Flowers grow in ſmall Cluſters, ſitting cloſe to the Branches; theſe have a ſhort, erect, four pointed Empalement, ſitting on the Germen, and an acute erect Petal, divided into 4 Parts. Under the Empalement ſits a large oval Germen, ſupporting 2 ſhort Styles, crowned by large reflexed Stigmas. The Germen becomes a large oval dry Berry, with one Cell, incloſing a large oval Nut with netted Furrows, whoſe Kernel hath 4 Lobes, variouſly furrowed.

The *Species* are,

1. JUGLANS *foliolis ovalibus glabris ſubſerratis ſubæqualibus. Hort. Cliff.* 449. Walnut with oval Lobes, ſmooth, ſawed, and equal. *Nux juglans ſive Regia vulgaris. C. B. P.* 417. Common Walnut.

2. JUGLANS *foliolis lanceolatis acutè ſerratis, intermediis majoribus.* Walnut with Spear-ſhaped Lobes, ſharply ſawed, the Middle being the largeſt. *Nux juglans Virginiana nigra. H. L.* 452. Black *Virginia* Walnut.

3. JUGLANS *foliolis cordato-lanceolatis infernè nervoſis, pediculis foliorum pubeſcentibus.* Walnut with Heart Spear-ſhaped Lobes, having many Veins on their under Side, and downy Foot Stalks to the Leaves. *Juglans nigra, fructu oblongo profundiſſimè inſculpto. Cat. Hort.* Black *Virginia* Walnut with an oblong Fruit very deeply furrowed.

4. JUGLANS *foliolis lanceolatis ſerratis, exterioribus latioribus. Lin. Sp. Pl.* 997. Walnut with Spear-ſhaped ſawed Lobes, the outer being the broadeſt. *Nux Juglans alba Virginienſis. Park. Theat.* 1414. White *Virginia* Walnut, or Hickery Nut.

5. JUGLANS *foliolis cuneiformibus ſerratis, exterioribus majoribus.* Walnut with Wedge-ſhaped Lobes, ſawed, the outer being the largeſt. *Juglans alba fructu minori cortice glabro. Clayt. Flor. Virg.* White Walnut with a ſmaller Fruit, and a ſmooth Bark.

6. JUGLANS *foliolis lanceolatis ſerratis glabris ſubæqualibus.* Walnut with ſmooth Spear-ſhaped ſawed Lobes, which are equal. *Juglans alba fructu ovato compreſſo, nucleo dulce, cortice ſquamoſo. Clayt. Flor. Virg.* White Walnut with an oval compreſſed Fruit, a ſweet Kernel, and a ſcaly Bark, commonly called Shagbark in *America*.

There are ſeveral Varieties of the common Walnut, diſtinguiſhed by the following Titles: The large Walnut, the thin ſhelled Walnut, the *French* Walnut, the late ripe Walnut, and the double Walnut, but theſe all vary when raiſed by the Seed, ſo that the Nuts from the ſame Tree will produce Plants, whoſe Fruit will differ, therefore there can be no Dependance upon the Trees raiſed from Nuts, till they have produced Fruit, ſo that thoſe Perſons who plant the Trees for their Fruit, ſhould make Choice of them in the Nurſeries when they have their Fruit upon them, otherwiſe they may be deceived by having ſuch as they would not chooſe.

The 2d Sort is commonly called Black *Virginia* Walnut; this grows to a large Size in *North America*. The Leaves of this Sort are compoſed of 5 or 6 Pair of Spear-ſhaped Lobes, which end in acute Points, and are ſawed on their Edges; the lower Pair of Lobes are the leaſt, the other gradually encreaſe in their Size to the Top, where the Pair at the Top, and the ſingle Lobe which terminates the Leaf, are ſmaller; theſe Leaves, when bruiſed, emit a ſtrong aromatick Flavour, as do alſo the outer Cover of the Nuts, which are rough, and rounder than thoſe of the common Walnut. The Shell of the Nut is very hard and thick, and the Kernel ſmall, but very ſweet.

The 3d Sort grows naturally in *North America*, where the Trees grow to a large Size. The Leaves are compoſed of 7 or 8 Pair of long Heart-ſhaped Lobes, broad at their Baſe, where they are divided into 2 round Ears, but terminate in acute Points; they are rougher, and of a deeper green than thoſe of the ſecond Sort, and have nothing of the aromatick Scent which they have. The Fruit is very long. The Shell is deeply furrowed, and very hard. The Kernel is ſmall, but well flavoured.

The 4th Sort is very common in moſt Parts of *North America*, where it is called Hickery Nut. The Leaves are compoſed of 2 or 3 Pair of oblong Lobes, terminated by an odd one; theſe are of a light green, and ſawed on their Edges; the lower Pair of Lobes are the ſmalleſt, and the upper the largeſt. The Fruit is ſhaped like common Walnut, but the Shell is not furrowed, and is of a light Colour.

The 5th Sort is not ſo large as the 4th. The Leaves are compoſed of 2 Pair of Lobes, terminated by an odd one; theſe are narrow at their Baſe, but broad and rounded at their Ends; they are ſawed on their Edges, and of a light green. The Nuts are ſmall, have a ſmooth Shell, and very hard and white.

The 6th Sort grows naturally in *North America*, where it riſes to a middling Stature. The Leaves of this Sort are compoſed of 3 Pair of ſmooth Spear-ſhaped Lobes, of a dark green Colour, ſawed on their Edges, and ending in acute Points. The Fruit is oval, the Shell white, hard, and ſmooth; the Kernel ſmall, but very ſweet. The young Shoots of the Tree are covered with a very ſmooth browniſh Bark, but the Stems and older Branches have a rough ſcaly Bark, from whence it had the Appellation of Shagbark, in *America*.

The common Walnut is propagated in many Parts of *England* for the Fruit, and formerly the Trees were propagated for their Wood, which was in very great Eſteem, till the Quantity of Mahogony, and other uſeful Woods which have been of late Years imported into *England*, have almoſt baniſhed the Uſe of Walnut.

Theſe Trees are propagated by planting their Nuts, which, as was before obſerved, ſeldom produces the ſame Sort of Fruit; ſo that the only Way to have the deſired Sort, is to ſow Nuts of the beſt Kinds; and if this is done in a Nurſery, the Trees ſhould be tranſplanted out when they have had 3 or 4 Year's Growth, to the Place where they are deſigned to remain, for theſe Trees do not bear tranſplanting when of a large Size, therefore there may be a good Number of Trees planted, which need not be put at more than 6 Feet apart, which will be Diſtance enough for them to grow till they produce Fruit; when thoſe whoſe Fruit are of the deſired Kind may remain, and the others cut up, to allow them Room to grow; by this Method a ſufficient Number of the Trees may be generally found among them to remain, which will thrive and flouriſh greatly when they have Room; but as many People do not care to wait ſo long for the Fruit, the next beſt Method is to make Choice of ſome young Trees in the Nurſeries, when they have their Fruit upon them; but though theſe Trees will grow and bear Fruit, they will never be ſo large or ſo long lived, as thoſe planted young.

All the Sorts of Walnuts which are propagated for Timber, ſhould be ſown in the Places where they are to remain; for the Roots of theſe Trees always incline downward, which being ſtopped or broken, prevent their aſpiring upward, ſo that they afterwards divaricate into Branches, and become low ſpreading Trees; but ſuch as are propagated for Fruit, are greatly mended by tranſplanting; for hereby they are rendered more fruitful, and their Fruit generally larger and fairer; it being a common Obſervation, That downright Roots greatly encourage the luxuriant Growth of Timber in all Sorts of Trees, but ſuch Trees as have their Roots ſpreading near the Surface of the Ground, are always the moſt fruitful.

The Nuts ſhould be preſerved in their outer Covers in dry Sand until *February*, when they ſhould be planted in Lines, at the Diſtance you intend them to remain; but in the Rows they may be placed pretty cloſe, for Fear the Nuts ſhould miſcarry; and the young Trees, where they are too thick, may be removed, after they have grown two or three Years, leaving the Remainder at the Diſtance they are to ſtand.

In tranſplanting theſe Trees, you ſhould always obſerve never to prune either their Roots or large Branches both which are very injurious to them; nor ſhould you be too buſy in lopping or pruning the Branches of theſe Trees while growing, for it often cauſes them to decay; but when there is a Neceſſity of cutting any of their Branches off, it ſhould be done early in *September*, that the Wound may heal over before the Cold increaſes; and the Branches ſhould always be cut off quite cloſe to the Trunk, otherwiſe the Stump which is left will decay, and rot the Body of the Tree.

The beſt Seaſon for tranſplanting theſe Trees is as ſoon as the Leaves begin to decay, at which Time, if they are carefully taken up, and their Branches preſerved entire, there will be little Danger of their ſucceeding, although they are 8 or 10 Years old, as I have ſeveral Times experienced; though, as was before obſerved, theſe Trees will not grow ſo large, nor continue ſo long, as thoſe which are removed young.

This Tree delights in a firm, rich, loamy Soil, or ſuch as is inclinable to Chalk or Marl; and will thrive very well in ſtony Ground, and on chalky Hills, as may be ſeen by thoſe large Plantations near *Leatherhead*, *Godſtone*, and *Carſhalton* in *Surry*, where are great Numbers of theſe Trees planted upon the Downs, which annually produce large Quantities of Fruit, to the great Advantage of their Owners; one of which I have been told, farms the Fruit of his Trees, to thoſe who ſupply the Markets, for 30*l. per Annum*.

The Diſtance theſe Trees ſhould be placed, ought not to be leſs than 40 Feet, eſpecially if Regard be had to their Fruit; though when they are only deſigned for Timber, if they ſtand near, it promotes their upright Growth. The black *Virginian* Walnut is much more inclinable to grow upright than the common Sort, and the Wood being generally of a more beautiful Grain, renders it preferable to that, and better worth cultivating. I have ſeen ſome of this Wood beautifully veined with black and white, which, when poliſhed, has appeared at a Diſtance like veined Marble. This Wood is greatly eſteemed by Cabinet Makers for Inlaying, as alſo for Bedſteads, Stools, Tables, and Cabinets; and is one of the moſt durable Woods for thoſe Purpoſes of *Engliſh* Growth, being rarely infected with Inſects of any Kind (which may proceed from its extraordinary Bitterneſs;) but it is not proper for Buildings of Strength, it being of a moſt brittle Nature, and exceeding ſubject to break very ſhort, though it commonly gives Notice thereof, by its cracking ſome Time before it breaks.

The general Opinion, that beating this Fruit improves the Trees, I do not believe, ſince in doing this, the younger Branches are generally broken and deſtroyed; but as it would be exceeding troubleſome to gather it by Hand, ſo in beating it off, great Care ſhould be taken that it be not done with Violence, for the Reaſon before aſſigned. In order to preſerve the Friut, it ſhould remain upon the Trees till it is thorough ripe, when it ſhould be beaten down, and laid in Heaps for two or three Days; after which they ſhould be ſpread abroad, when, in a little Time, their Huſks will eaſily part from the Shells; then you muſt dry them well in the Sun, and lay them up in a dry Place, where Mice or other Vermin cannot come to them, in which Place they will remain good for 4 or 5 Months; but there are ſome Perſons who put their Walnuts into an Oven gently heated, where they let them remain 4 or 5 Hours to dry, and then put them up in Oil Jars, or any other cloſe Veſſel, mixing them with dry Sand, by which Method they will keep good 6 Months. The putting them in the Oven is to dry the Germ, and prevent their ſprouting; but if the Oven be too hot it will cauſe them to ſhrink, therefore great Care muſt be had to that.

All the other Sorts are propagated the ſame Way, but as few of the Sorts produce Fruit in *England*, their Nuts muſt be procured from *North America*; which ſhould be gathered when fully ripe, and put up in dry Sand, to preſerve them in their Paſſage to *England*: When they arrive here, the ſooner they are planted the greater Chance there will be of their ſucceeding; when the Plants come up, they ſhould be kept clean from Weeds; and if they ſhoot late in the Autumn, and their Tops are full of Sap, they ſhould be covered with Mats, to prevent the early Froſts from pinching their tender Shoots, which often cauſes them to die down a conſiderable Length before Spring; but if they are ſcreened from theſe early Froſts, the Shoots will become firmer and better able to reſiſt the Cold. Some of theſe Sorts are tender while young, ſo require a little Care the two firſt Winters, but afterward will be hardy enough to reſiſt the greateſt Cold of this Country.

The black *Virginia* Walnut is full as hardy as the common Sort; there are ſome large Trees of this Kind in the *Chelſea* Garden, which have produced great Quantities of Fruit upward of 40 Years; the Nuts have generally ripened ſo well there as to grow, but their Kernels are ſmall, ſo are of little Value.

Theſe Trees all require the ſame Culture as the common Walnut, but they grow beſt in a ſoft loamy Soil not too dry, and where there is a Depth of Soil for their Roots to run down. The Hickery when young, it very tough and pliable, ſo the Sticks of it are much eſteemed; but the Wood when grown large is very brittle, ſo not of any great Uſe. The black *Virginia* Walnut is the moſt valuable Wood of all the Sorts; ſome of the Trees are beautifully veined, and will take a good Poliſh, but others have very little Beauty, which is the Caſe of many other Sorts of Wood.

JUJUBE. *See* Ziziphus.

JULIANS, or ROCKETS. *See* Heſperis.

JULY FLOWER. *See* Dianthus.

JUNCUS. *Tourn. Inſt. R. H.* 246. *Tab.* 127. *Lin. Gen. Pl.* 396. Ruſh; in *French*, *Jonc*.

The *Characters* are,

It hath a Chaff opening with 2 Valves, an Empalement with 6 oblong pointed little Leaves which are permanent; the Flower hath no Petals, but the coloured Empalement is by ſome taken for Petals. It hath 6 ſhort hairy Stamina, terminated by oblong erect Summits. It hath a three cornered pointed Germen, with a ſhort ſlender Style, crowned by 3 long hairy ſlender Stigmas reflexed. The Germen becomes a cloſe three cornered Capſule with 1 Cell, opening with 3 Valves, incloſing roundiſh Seeds.

The *Species* are,

1. JUNCUS *culmo ſubnudo tereti mucronato, paniculâ terminali, involucro diphyllo ſpinoſo. Lin. Sp. Pl.* 325. Ruſh with a naked, taper, pointed Stalk, terminated by a Panicle, and a prickly two leaved Involucrum. *Juncus acutus, capitulis ſorghi. C. B. P.* 11. Prickly large Sea Ruſh.

2. JUNCUS *culmo nudo, apice membranaceo incurvo, paniculâ laterali. Lin. Sp. Pl.* 326. Ruſh with a naked Stalk, an incurved membranaceous Apex, and a lateral Panicle. *Juncus acutus, panicula ſparſa. C. B. P.* Common hard Ruſh.

3. JUNCUS *culmo nudo ſtricto, paniculâ laterali. Flor. Leyd.* 44. Ruſh with a naked cloſe Stalk, and a lateral Panicle. *Juncus lævis, paniculâ ſparſâ, major. C. B. P.* Larger common ſoft Ruſh, with a ſpreading Panicle.

4. JUNCUS *culmo nudo ſtricto, capitulo laterali. Prod. Leyd.* 44. Ruſh with a cloſe naked Stalk and lateral Heads. *Juncus lævis, paniculâ non ſparſâ. C. B. P.* Soft Ruſh, with a more compact Panicle.

There are many other Species of this Genus which grow naturally in *England*, and are very troubleſome Weeds in many places, ſo are not worthy of being enumerated here; and thoſe which are here mentioned, is only to point out a Method of deſtroying them.

The 1ſt and 2d Sorts grow on the Sea Shores, where they are frequently watered by the Salt Water. Theſe two Sorts are planted with great Care on the Banks of the Sea in *Holland*, in order to prevent the Water from waſhing away the Earth; which being very looſe, would be in Danger of removing every Tide, if it were not for the Roots of theſe Ruſhes, which faſten themſelves very deep in the Ground, and mat themſelves near the Surface, ſo as to hold the Earth cloſely together. Therefore, whenever the Roots of theſe Ruſhes are deſtroyed, the Inhabitants immediately repair them to prevent farther Damage. In the Summer Time, when the Ruſhes are fully grown, the Inhabitants cut them, and tie them up in Bundles, which are dried, and afterward carried into the larger Towns and Cities, where they are wrought into Baſkets, and ſeveral other uſeful Things, which are frequently ſent into *England*. Theſe Sorts do not grow ſo ſtrong in *England*, as they do on the *Maeſe*, and ſome other Places in *Holland*, where I have ſeen them upward of 4 Feet high.

The 3d and 4th Sorts grow on moiſt ſtrong uncultivated Lands in moſt Parts of *England*, and conſume the Herbage where they are ſuffered to remain. The beſt Method of deſtroying theſe Ruſhes is, to fork them up clean by the Roots in *July*, and after having let them lie a Fortnight or three Weeks to dry, to lay them in Heaps, and burn them gently; and the Aſhes which theſe afford, will be a good Manure for the Land; but in order to prevent their growing again, and to make the Paſture good, the Land ſhould be drained, otherwiſe there will be no deſtroying them entirely; but after it is well drained, if the Roots are annually drawn up, and the Ground kept duly rolled, they may be ſubdued.

JUNIPERUS. *Tourn. Inſt. R. H.* 588. *Tab.* 361. *Lin. Gen. Pl.* 1005. Juniper; in *French*, *Genevrier*.

The *Characters* are,

It hath male and female Flowers in different Plants, and *ſometimes at ſeparate Diſtances on the ſame Plant. The male Flowers grow on a conical Katkin; the Flowers are placed by Threes along the common Tail oppoſite, and terminated by a ſingle one; the Scales are broad, ſhort, lying on each other, and fixed to the Column by a very ſhort Foot Stalk. The Flower has no Petal, but 3 Stamina in that Flower which terminates, joined in one Body below; theſe have 3 diſtinct Summits, adhering to the Scales of the lateral Flowers. The female Flowers have a ſmall three pointed Empalement ſitting upon the Germen, and is permanent; they have 3 ſtiff acute permanent Petals, the Germen ſitting below the Empalement, ſupports 3 ſingle Styles crowned by Stigmas. The Germen becomes a roundiſh Berry, incloſing 3 ſtony Seeds oblong and angular on one Side, but convex on the other.*

The *Species* are,

1. JUNIPERUS *foliis ternis patentibus mucronatis. Lin. Sp. Pl.* 1040. Juniper with ſpreading ſharp-pointed Leaves placed by Threes. *Juniperus vulgaris fruticoſa. C. B. P.* 488. The common *Engliſh* Juniper.

2. JUNIPERUS *foliis ternis patentibus, longioribus acutioribuſque, ramis erectioribus.* Juniper with longer and more acute pointed Leaves placed by Threes, and ſpreading and erect Branches. *Juniperus vulgaris arbor. C. B. P.* 488. The Tree, or *Swediſh* Juniper.

3. JUNIPERUS *foliis ternis omnibus patentibus.* Juniper with Leaves placed by Threes, which are all of them ſpreading. *Juniperus Virginiana. H. L. Folio ubique juniperino. Boerh. Ind.* Cedar of *Virginia*, or red Cedar.

4. JUNIPERUS *foliis ternis baſi adnatis, junioribus imbricatis, ſenioribus patulis. Hort. Cliff.* 464. Juniper with Leaves placed by Threes adhering at their Baſe, the young ones lying over each other, and the old ones ſpreading. *Juniperus Virginiana, foliis inferioribus juniperinis, ſuperioribus ſabinam, vel cypreſſum referentibus. Boerh. Ind. Carolina* Cedar.

5. JUNIPERUS *foliis inferioribus ternis patentibus, ſuperioribus quadrifariàm imbricatis.* Juniper with ſpreading under Leaves placed by Threes, and the upper by Fours, which lie cloſe over each other. *Juniperus Bermudiana. H. L.* Cedar of *Bermudas.*

6. JUNIPERUS *foliis ternis patentibus, ſubulatis, acutis.* Juniper with Awl-ſhaped acute Leaves placed by Threes, which ſpread open. *Juniperus major baccâ cæruleâ. C. B. P.* Greater Juniper with blue Berries.

7. JUNIPERUS *folis inferioribus ternis brevioribus patentibus, ſuperioribus imbricatis acutis.* Juniper with under Leaves placed by Threes, which are ſhorter and ſpread open, the upper ones ſharp pointed, and lying over each other. *Cedrus folio cupreſſi major, fructu flaveſcente. C. B. P.* Greater Cedar with a Cypreſs Leaf and yellowiſh Fruit.

8. JUNIPERUS *foliis undique imbricatis ovatis obtuſis. Flor. Leyd.* 90. Juniper with oval blunt Leaves, which every where lie over each other. *Cedrus folio cupreſſi media, majoribus baccis. C. B P.* 488. Middle Cedar, with a Cypreſs Leaf and larger Berries.

9. JUNIPERUS *foliis omnibus quadrifariàm imbricatis.* Juniper with all the Leaves placed by Fours, and lying over each other. *Juniperus maxima cupreſſi folio minimo, cortice exteriore in tenues philyras ſpirales ductiles. Sloan. Cat. Jam.* 128. Greateſt Juniper with the leaſt Cypreſs Leaf, and the outer Bark ſplitting off in thin ductile Pieces, commonly called *Jamaica* Berry-bearing Cedar.

10. JUNIPERUS *foliis oppoſitis erectis decurrentibus, ramis patulis.* Juniper with oppoſite, erect, running Leaves, and ſpreading Branches. *Sabina folio tamariſci. C. B. P.* 487. Savin with a Tamariſk Leaf, or common Savin.

11. JUNIPERUS *foliis oppoſitis patulis decurrentibus, ramis erectioribus.* Juniper with oppoſite ſpreading Leaves which run into each other, and more erect Branches. *Sabina folio cupreſſi. C. B. P.* 487. Savin with a Cypreſs Leaf, commonly called Berry-bearing Savin.

12. JUNIPERUS *foliis undique imbricatis obtuſis, ramis teretibus.* Juniper with obtuſe Leaves every-where lying over each other, and taper Branches. *Juniperus major, baccâ rufeſcente. C. B. P.* 489. Greater Juniper with a browniſh Berry.

13. JUNIPERUS *foliis quadrifariàm imbricatis acutis. Prod. Leyd.* 90. Juniper with acute Leaves lying over each other, and placed four Ways. *Cedrus Hiſpanica procerior, fructu maximo nigro. Tourn. Inſt.* 588. Taller *Spaniſh* Cedar, with a very large black Fruit.

The 1ſt Sort grows naturally upon chalky Lands, in many Parts of *England.* This is a low Shrub, ſeldom riſing more than 3 Feet high, ſending out many ſpreading Branches on every Side, covered with a brown Bark, and garniſhed with narrow Awl-ſhaped Leaves ending in acute Points, which are placed by Threes round the Branches, pointing outward; theſe are of a grayiſh Colour, and continue through the Year; the male Flowers ſometimes are ſituated on the ſame Plant with the female, but at Diſtances; at other Times they are upon diſtinct Plants: The female Flowers are ſucceeded by roundiſh Berries which are firſt green, but when ripe, are of a dark purple Colour. The Berries ripen in Autumn.

The Wood, the Berries, and the Gum, are uſed in Medicine; the Gum is titled Sandaracha.

The 2d Sort is known in the Gardens by the Title of *Swediſh* Juniper: this is by many ſuppoſed to be only a Variety of the firſt, but is undoubtedly a diſtinct Species, for I have many Years raiſed both Sorts from the Seeds, and have never found them alter. This Sort riſes to the Height of 10 or 12 Feet, the Branches grow more erect, the Leaves are narrower, and end in more acute Points; they are placed farther aſunder on the Branches, and the Berries are larger. It grows naturally in *Sweden*, *Denmark*, and *Norway.*

The 3d Sort grows naturally in moſt Parts of *North America*, where it is called red Cedar, to diſtinguiſh it from a Sort of Cypreſs, which is called white Cedar there. Of this there are two, if not three Varieties, beſides the Species here enumerated; one of which has Leaves in every Part, like thoſe of the Savin, and upon being rubbed, emit a very ſtrong ungrateful Odour: This is commonly diſtinguiſhed in *America*, by the Title of Savin Tree. There is another with Leaves very like thoſe of the Cypreſs, but as theſe generally ariſe from the ſame Seeds when they are ſent from *America*, ſo they may be ſuppoſed to be only ſeminal Variations.

The lower Leaves of the 4th Sort are like thoſe of the *Swediſh* Juniper, but the upper Leaves are like thoſe of the Cypreſs; and this Difference is conſtant, if the Seeds are carefully gathered from the ſame Tree; but as moſt of thoſe People who ſend over theſe Seeds, are not very careful to diſtinguiſh the Difference, ſo it often happens that the Seeds of 2 or 3 Sorts are mixed together, which has given Occaſion to People to imagine them but one Sort; but all the Leaves of the third are like thoſe of the Juniper, ſo the Gardeners call this the red *Virginia* Cedar; and the fourth they call *Carolina* Cedar, though all the Sorts grow naturally in *Virginia*.

The 5th Sort is the *Bermudas* Cedar, whoſe Wood has a very ſtrong Odour, and was formerly in great Eſteem for wainſcotting Rooms, and for Furniture; but the Odour being too powerful for many Perſons, has rendered it leſs valuable, and at preſent there is not much of it imported into *England*. Theſe Plants, while young, have acute-pointed Leaves which ſpread open, and are placed by Threes round the Branches; but as the Trees advance, their Leaves alter, and the Branches are four cornered; the Leaves are very ſhort, and placed by Fours round the Branches, lying over each other like the Scales of Fiſh; the Berries are produced toward the End of the Branches, theſe are of a dark red Colour inclining to purple. As there are few of theſe Trees of any great Size in *England*, I have not had an Opportunity of examining their Flowers, therefore do not know if they have male and female Flowers on the ſame Plant, or if they are on different Plants; for although I have received very fine Specimens from *Bermudas*, yet they are all with Fruit on them almoſt fully grown, and not one with male Flowers; and as theſe Trees are commonly deſtroyed in *England* whenever there happens a ſevere Winter, we have little Hopes of ſeeing them in flower here.

The 6th Sort grows naturally in *Iſtria*, from whence I received the Berries, which have ſucceeded with me in the *Chelſea* Garden. This hath ſpreading Branches growing thinly, garniſhed with Awl-ſhaped, acute-pointed Leaves, placed by Threes round the Branches; they are of a dark green, and not very cloſe to each other; they grow horizontally, pointing outward; the Berries are much larger than thoſe of the common Juniper, and are blue when ripe.

The 7th Sort grows naturally in *Portugal*, from whence I have frequently received the Berries. This Sort grows with its Branches in a pyramidical Form, the lower ones are garniſhed with ſhort, acute-pointed, grayiſh Leaves, placed by Threes round the Branches, pointing outward; but thoſe on the upper Branches are of a dark green, lying over each other like the Scales of Fiſh, but end in acute Points. The male Flowers are produced at the Extremity of the Branches, they are ſituated in a looſe, ſcaly, conical Katkin, ſtanding on a ſhort Foot Stalk erect; the Fruit is produced ſometimes upon the ſame Tree, at Diſtances from the Flowers, and at other Times they are upon ſeparate Trees; the Berries of this are of a pale yellow when ripe, and about the Size of thoſe of the common Juniper.

The 8th Sort grows naturally in *Spain* and *Italy*; from both which Countries I have received it. The Branches of this Sort grow erect, and are covered with a reddiſh brown Bark; the Leaves are ſmall, obtuſe, and lie over each other like the Scales of Fiſh; the male Flowers grow at the Extremity of the Branches in a conical Katkin, and the Fruit grows ſingle from the Side of the Branches below the Katkins, on the ſame Branch; the Berries are large, oval, and, when ripe, are brown.

The 9th Sort grows naturally in *Jamaica*, and alſo in the other Iſlands of the *Weſt-Indies*, where it riſes to be one of the largeſt Timber Trees in thoſe Countries; the Wood is frequently brought from thence by the Inhabitants of *North America*, for building Ships. This Sort is generally confounded with the *Bermudas* Cedar, and taken for the ſame, but the Specimens of it which were ſent me by the late Dr. *Houſtoun*, prove them to be different Trees; for the Branches of this ſpread very wide, the Leaves are extremely ſmall, and are every where lying *imbricatim* over each other; the Bark is rugged, and ſplits off in Strings, and is of a very dark Colour; the Berries are ſmaller than thoſe of the *Bermudas* Cedar, and are of a light brown Colour when ripe: This Sort is male and female in different Trees.

The 10th Sort is the common Savin; this grows naturally in *Italy*, *Spain*, and the *Levant*, upon the Mountains where it is cold. It ſends out its Branches horizontally, ſo ſeldom riſes more than 3 or 4 Feet high, but ſpreads to a conſiderable Diſtance every Way; the Branches are garniſhed with very ſhort, acute-pointed Leaves placed oppoſite, which run into each other along the Branch, and their Ends point upward. This Sort very rarely produces either Flower or Seed in the Gardens; I have frequently examined old Plants which have been ſtanding more than 50 Years, and have not more than 3 Times found any male Flowers upon them, and but once have ſeen any Berries, which were upon a ſeparate Tree from the Flowers; theſe Berries were ſmaller than thoſe of the common Juniper, but of the ſame Colour, and were a little compreſſed; the whole Plant has a very rank ſtrong Odour when touched. The Leaves of this Shrub are much uſed by the Farriers for Horſes when they have Worms, and Mr. *Ray* commends the Juice of it mixed with Milk, and ſweetened with Sugar, as an excellent Medicine for Children troubled with Worms. The Leaves beaten into a Cataplaſm with Hog's Lard, will cure Children's ſcabby Heads.

The 11th Sort has, by many, been ſuppoſed to be only an accidental Variety of the former, but there is a manifeſt Difference between them; for the Branches of this grow more erect than thoſe of the 11th Sort, the Leaves are ſhorter, and end in acute Points which ſpread outward. This Sort will riſe to the Height of 7 or 8 Feet, and produces great Quantities of Berries. I have propagated this Sort from Seeds, but have never found it vary. It has been diſtinguiſhed by moſt of the old Botaniſts, by the Title of Berry-bearing Savin. It grows naturally on the *Alps*, from whence I have received the Berries.

The 12th Sort grows naturally in *Spain*, *Portugal*, and the South of *France*, where it riſes 10 or 12 Feet high, ſending out Branches the whole Length of the Stem, garniſhed with ſmall obtuſe Leaves, lying over each other like the Scales of Fiſh; the Branches are ſmall and taper, having no Angles or Corners, as moſt of the others have; the male Flowers are ſituated at the End of the Branches in conical ſcaly Katkins, and the Berries grow below from the Side of the ſame Branches. Theſe are larger than thoſe of the common Juniper, and when ripe are brown.

The 13th Sort grows naturally in *Spain* and *Portugal*, where it riſes from 25 to 30 Feet high, ſending out many Branches which form a Sort of Pyramid; the Branches are garniſhed with acute-pointed Leaves which lie over each other four Ways, ſo as to make the Branches four cornered; the Berries of this Sort are very large, and black when ripe.

Theſe Plants are all propagated by ſowing their Seeds, the beſt Seaſon for which is as ſoon as they are ripe, if they can then be procured; for when they are kept until Spring before they are ſown, they will not come up until the ſecond Year. The Ground in which the Seeds of the hardy Sorts are ſown, ſhould be freſh and light, but it ſhould not be dunged: It ſhould be well dug and levelled very even, then ſow your Seeds thereon pretty thick, and ſift ſome Earth over them about half an Inch thick; this Bed will require no farther Care than to keep it clear from Weeds, and toward the Middle or latter End of *April*, you will find ſome of your Plants appear above Ground, though, perhaps, the greateſt Part of them may lie till the Spring following before they come up; therefore you ſhould carefully clear the Beds from Weeds. and in very dry Weather, refreſh them with ſome Water, which will greatly promote the Growth of thoſe Plants which are up, and alſo cauſe the other Seeds to vegetate; but if the Bed in which theſe Seeds are ſown, is much expoſed to the Sun, it ſhould be ſhaded with Mats in the Day; for when the Plants come firſt up, they will not bear too much Heat. In this Bed they ſhould remain till the ſecond Autumn, when you muſt prepare ſome Beds to tranſplant them into, which ſhould alſo be of light freſh undunged Soil; and having well dug and cleanſed the Ground from all noxious Weeds and Roots, you ſhould make them level; then in the Beginning of *October*, which is the proper Seaſon for removing theſe Plants, you ſhould raiſe up the young ones with a Trowel, preſerving as much Earth as poſſible to their Roots, and plant them into the Beds about 5 or 6 Inches aſunder each Way, giving them ſome Water to ſettle the Earth to their Roots; and if it ſhould prove very dry Weather, you may lay a little Mulch upon the Surface of the Ground round their Roots, which will be of great Service to the Plants. But as many of the Seeds will be yet in the Ground, ſo the Beds ſhould not be diſturbed too much in taking up the Plants; for I have known a Bed ſown with theſe Berries, which has ſupplied Plants for three Years drawing, ſome of the Berries having lain ſo long in the Ground before they ſprouted; therefore the Surface of the Beds ſhould be kept level, and conſtantly clean from Weeds.

The Plants may remain 2 Years in theſe Beds, obſerving to keep them clear from Weeds; and in the Spring you ſhould ſtir the Ground gently between them, that their Roots may with greater Eaſe ſtrike into it; after which Time they ſhould be tranſplanted, either into a Nurſery, at the Diſtance of 3 Feet Row from Row, and 18 Inches aſunder in the Rows, or into the Places where they are to remain for good. The beſt Seaſon to tranſplant them (as I before obſerved) is in the Beginning of *October*, when you ſhould take them up carefully, to preſerve a Ball of Earth to their Roots; and when planted, their Roots ſhould be mulched; all which, if carefully attended to, as alſo obſerving to refreſh them with Water in very dry Weather, until they have taken new Root, will preſerve them from the Danger of not growing; and they being extreme hardy in Reſpect to Cold, will defy the ſevereſt of our Winters to injure them, provided they are not planted in a moiſt or rich Soil.

In order to have theſe Trees aſpire in Height, their under Branches ſhould be taken off, eſpecially where they are inclined to grow out ſtrong; but they muſt not be kept too cloſely pruned, which would retard their Growth; for all theſe ever-green Trees do more or leſs abound with a reſinous Juice, which in hot Weather is very apt to flow out from ſuch Places as are wounded; ſo that it will not be adviſeable to take off too many Branches at once, which would make ſo many Wounds from which their Sap in hot Weather would flow in ſuch Plenty, as to render the Trees weak and unhealthy.

The two Sorts of *Virginian* Cedars grow to a much greater Height than the former, and in their native Country afford excellent Timber for many Uſes; but with us there are very few which are above 20 or 25 Feet high, though there is no Doubt of their growing larger; for they thrive very faſt after the three firſt Years, and reſiſt the ſharpeſt Froſt of our Climate exceeding well, and are very apt to grow ſtrait and regular, provided they are not ſuffered to ſhoot out too much at the Bottom.

Theſe Plants are alſo propagated by Seeds, which muſt be procured from *Virginia* or *Carolina* (for they rarely produce ripe Seeds in *England*), and ſown as was directed for the other Junipers; but as this Seed cannot be procured in *England* till Spring, ſo when ſown at that Seaſon, it remains in the Ground until the ſucceeding Spring before the Plants appear; therefore you muſt obſerve to keep the Beds clear from Weeds, and not ſuffer the Seeds to be diſturbed, which is often the Fault of ſome impatient People, who think, becauſe the Plants do not riſe the firſt Year, that they will never come up, and ſo dig up the Ground again, whereby their Seeds are buried; but if they are let remain, they ſeldom fail to grow, though ſometimes it is 2 Years after ſowing before they come up. When the Plants are come up, they muſt be carefully weeded, and in dry Weather ſhould be refreſhed with Water, which will greatly forward their Growth; and the Autumn following they ſhould have a little rotten Tan laid between them to keep out the Froſt. In this Bed the Plants may remain till they have had 2 Years Growth, then they ſhould be tranſplanted into other Beds, as was directed before for the other Sorts, obſerving to preſerve a Ball of Earth to their Roots; and after they are planted, if the Seaſon be dry, they muſt be carefully watered, and the Surface of the Ground covered with Mulch, to prevent the Sun and Wind from entering the Earth, to dry their Fibres; but they ſhould not be too much watered, which often proves injurious to theſe Trees, by rotting their tender Fibres ſoon after they are emitted, whereby the Plants have been often deſtroyed.

In theſe Beds they may remain 2 Years, obſerving to keep them clear from Weeds; and in Winter you ſhould lay a little freſh Mulch on the Surface of the Ground round their Roots, which will prevent the Froſt from penetrating to them, and effectually preſerve them; for while the Plants are ſo young, they are liable to be injured by hard Froſts, when too much expoſed thereto; but when they have attained a greater Strength, they will reſiſt the ſevereſt of our Cold.

After 2 Years, they ſhould either be removed into a Nurſery (as was directed for the common Juniper) or tranſplanted where they are deſigned to remain; obſerving always to take them up carefully, otherwiſe they are ſubject to fail upon tranſplanting; as alſo to mulch the Ground, and water them as was before directed, until they have taken Root; after which they will require no farther Care, than only to keep the Ground clear about their Roots, and to prune up their Side Branches to make them aſpire in Height.

The Soil in which you plant theſe Trees, ſhould be freſh and light, but muſt not be dunged, eſpecially at the Time when they are planted; for Dung is very hurtful to them, if it be not quite rotted to Mould; therefore the Mulch which is laid upon the Surface of the Ground, ſhould not be Dung, but rather ſome old Tanners Bark or Sea Coal Aſhes, which will prevent the Froſt from penetrating deep in the Ground.

Theſe Trees being thus managed, will in a few Years riſe to a conſiderable Stature, and by the Variety of their ever green Leaves and Manner of Growth, will greatly add to the Beauty of all Plantations, if rightly diſpoſed, which indeed is what we ſeldom obſerve in any of the *Engliſh* Gardens or Wilderneſſes; for there are few People who conſider the different Growths of the ſeveral Trees with which they compoſe ſuch Plantations, ſo as to place the talleſt growing Trees the backwardeſt from Sight, and the next Degree to ſucceed them, and ſo gradually diminiſhing till we come to the common Juniper, and others of the ſame Growth, whereby all the Trees will be ſeen, and the gradual Declivity of their Tops will appear like a verdant Slope, and be much more agreeable to the Sight, as alſo more advantageous to the Growth of the Trees, than to place Shrubs of humble Growth near ſuch Plants as will grow to the firſt Magnitude, whereby the Shrub is hid from Sight, and will be over-ſhadowed and deſtroyed; nor can the Diſtance which each Tree requires, be ſo juſtly proportioned any other Way; for in this Diſtribution, the largeſt Trees being ſeparated by themſelves, may be planted at a due Diſtance; and then thoſe of a middling Growth ſucceeding, may be accordingly allowed ſufficient Room; and the ſmaller, which are next the Sight, being placed much cloſer, will hide the naked Stems of the larger Trees, and have an agreeable Effect to the Sight.

The Timber of theſe Trees is of excellent Uſe in *America*, for building Veſſels, wainſcoting Houſes, and making many Sorts of Utenſils, it abounding with a bitter Reſin, which prevents its being deſtroyed by Vermin, but it is very brittle, and ſo not proper for ſtubborn Uſes; but however, by encreaſing the Number of our Timber Trees, we ſhall find many Advantages, beſides the Pleaſure their Variety affords; for we may hereby have Trees of very different Kinds, adapted to grow in various Soils and Situations, whereby we ſhall never want proper Trees for all the different Sorts of Soils in *England*, if proper Care be taken in their Choice; which would be a great Improvement to many Parts of this Kingdom, which now lie unplanted, becauſe the Owner, perhaps, finds that neither Oaks nor Elms will thrive there, and ſo conſequently concludes, that no other Sort will, which is a great Miſtake; for if we conſider how different the Structure of Trees is, and only obſerve what Sorts are adapted for growing on dry barren Mountains, and what are deſigned for the lower and richer Valleys, we need never be at a Loſs for proper Trees for all Sorts of Ground.

The *Bermudas* Cedar being a Native of that Iſland, and alſo of the *Bahama Iſlands*, is much tenderer than either of the former Sorts, ſo is not likely to thrive well in this Country; for although many of theſe Plants have lived ſeveral Years in the open Air in *England*, yet whenever a ſevere Winter happens, it either kills them, or ſo much defaces them, that they do not recover their Verdure in a Year or two after.

Theſe Plants are propagated by Seeds as the former, with only this Difference, that theſe ſhould be ſown in Pots or Tubs of Earth, that they may be removed into Shelter in the Winter Time, otherwiſe the young Plants are often hurt by hard Froſts; but they will require no more Care than only to be placed under a common hot Bed Frame, where the Glaſſes may be conſtantly kept off in mild Weather, when they cannot have too much free Air, and only covered in hard Froſts. Theſe Seeds conſtantly remain in the Ground until the ſecond Year before they come up, therefore the Earth in the Pots ſhould not be diſturbed; and in the Summer Time they ſhould be placed in the Shade, to prevent the Earth from drying too faſt; and in very dry Weather they ſhould be often watered, but do not give too much Water to them at once, which would rot the Seeds.

The Spring following, when the young Plants come up, they muſt be carefully cleared from Weeds, and in dry Weather refreſhed with Water; but ſhould ſtand during the Summer Seaſon, in a Place defended from ſtrong Winds; and in Winter muſt be placed under Frames, where they may be covered in hard froſty Weather, but muſt have open Air when the Weather is mild. In *April* following you ſhould tranſplant them each into a ſingle Halfpenny Pot filled with freſh light Earth, being careful to raiſe them up with a Ball of Earth to their Roots; and when they are planted, you ſhould water them, to ſettle the Earth to their Roots; then place the Pots in a warm Situation, where they may be defended from Sun and Wind: But if you will beſtow a moderate hot Bed to plunge the Pots upon, it will greatly promote their taking new Root; however, you muſt carefully defend them from the great Heat of the Sun, which is injurious to them when freſh removed; but when they have taken new Root, you may expoſe them by Degrees to the open Air. If you ſuffer the Pots to remain plunged all the Summer, it will preſerve the Earth therein from drying ſo faſt as it would do, if they were ſet upon the Ground.

In *October* you ſhould again remove theſe Plants into Shelter, or elſe plunge their Pots into the Ground under a warm Hedge, where they may be protected from the cold North and Eaſt Winds; and in the Spring following you muſt ſhift the Plants into Pots a Size larger, taking away ſome of the Earth from the Outſide of the Ball, and adding ſome freſh, which will promote their Growth; and ſo continue to manage them as was before directed, until you plant them out in the Places where they are deſigned to remain; which ſhould not be done till they are 3 or 4 Years old, by which Time they will be ſtrong enough to bear the Cold of our common Winters.

The Reaſon for my directing theſe Plants to be preſerved in Pots until they are planted out for good, is, becauſe they are difficult to tranſplant; and being tender, will require ſome Shelter while young; and whoever obſerves the Method here laid down, will find the Plants ſo managed to gain two Years Growth in ſix, from thoſe raiſed in the open Air, and be in leſs Danger of being deſtroyed; and as the Trouble and Expence in raiſing them this Way is not great, it is worth practiſing, ſince in a few Years the Trees will recompenſe the Trouble.

The Timber of this Tree is of a reddiſh Colour, and very ſweet, and is commonly known in *England* by the Name of Cedar Wood, though there are divers Sorts of Wood called by that Name, which come from very different Trees, eſpecially in the *Weſt-Indies*, where there are ſeveral Trees of vaſtly different Appearances and Genera, which have that Appellation; it is this Wood which is uſed for Pencils, as alſo to wainſcot Rooms, and make Stair Caſes, it enduring longer ſound, than moſt other Sorts of Timber, which, perhaps, may be owing to ſome extreme bitter Taſte in the Reſin, with which the Tree abounds, for it is very remarkable, that the Worms do not eat the Bottoms of the Veſſels built with this Wood, as they do thoſe built with Oak, ſo that the Veſſels built with Cedar are much preferable to thoſe built with any other Sort of Timber, for the Uſe of the *Weſt-India* Seas, but they are not fit for Ships of War, the Wood being ſo brittle as to ſplit to Pieces with a Cannon Ball.

The *Jamaica* Juniper is more impatient of Cold than the *Bermudas*, ſo will not live through the Winter in the open Air in *England*, and the Plants muſt be preſerved in Pots, and houſed in the Winter; this is propagated by Seeds, as the *Bermudas* Cedar, but if the Pots are plunged into a moderate hot Bed the ſecond Spring after the Seeds are ſown, it will bring up the Plants ſooner, and they will have more Time to get Strength before Winter.

All the other Sorts are hardy enough to live in the open Air, ſo are very well worth propagating, as they will add to the Variety of ever-green Plantations, ſome of the Sorts will riſe to a very conſiderable Height, ſo may prove to be uſeful Timber, and may be adapted to ſuch Soils as will not ſuit many other Trees.

The common Savin ſhould not be neglected, becauſe it is ſo very hardy as never to be injured by the ſevereſt Froſt; and as this ſpreads its Branches near the Ground, if the Plants are placed on the Borders of Woods, they will have a good Effect in Winter, by ſcreening the Nakedneſs of the Ground from Sight.

All theſe Sorts are propagated by their Seeds, which may be ſown as the common Juniper, and the Plants afterward ſo managed, and moſt of the Sorts may be propagated by Cuttings, which, if planted in Autumn, in a ſhady Border, will take Root; but thoſe Plants raiſed from Cuttings, will never grow ſo upright, nor to ſo large a Size as the Plants raiſed from Seeds, ſo that when they can be procured, it is much the better Method, but the other is frequently practiſed on thoſe Sorts which do not perfect their Seeds in *England*.

As ſeveral of theſe Sorts grow to the Height of 18 or 20 Feet, the procuring as many of the Sorts as can be gotten from the Countries of their Growth, will be adding to the Variety of our ever-green Plantations, which cannot be too much propagated in *England*, where, in general, our Winters are temperate enough for them to thrive to Advantage; and as the Sorts, which are a little more tender than the others, obtain Strength, they will be in leſs Danger of ſuffering by ſevere Winters, as we find by many other Plants, which were ſo tender as not to live in the open Air at firſt, but now defy the ſevereſt Cold of our Climate.

JUSSIÆA. *Lin. Gen. Pl.* 478.

The *Characters* are,

It hath a ſmall permanent Empalement, divided into 5 *Parts at the Top, ſitting on the Germen. The Flower has* 5 *roundiſh ſpreading Petals, and* 10 *ſhort ſlender Stamina, terminated by roundiſh Summits. The oblong Germen ſupports a ſlender Style, crowned by a flat Stigma, marked with* 5 *Stripes. The Germen becomes a thick oblong Capſule, crowned by the Empalement, which opens Lengthways, and is filled with ſmall Seeds.*

The *Species* are,

1. JUSSIÆA *erecta villoſa, floribus tetrapetalis, octandriis, pedunculatis. Lin. Sp. Pl.* 388. Upright hairy *Juſſiæa*, with Flowers ſtanding on Foot Stalks, having 4 Petals and 8 Stamina. *Lyſimachia Indica non pappoſa, flore luteo minimo, ſiliquis Caryophyllum Aromaticum æmulantibus. H. L.* 396. *Indian* Primroſe with a very ſmall yellow Flower, and Pods reſembling Cloves.

2. JUSSIÆA *villoſa, caule erecto ramoſo, floribus pentapetalis, decandriis ſeſſilibus.* Hairy *Juſſiæa* with an erect branching Stalk, Flowers having 5 Petals, and 10 Stamina, which ſit cloſe to the Stalk. *Lyſimachia lutea erecta, non pappoſa major, foliis hirſutis, fructu caryophylloide. Sloan. Cat. Jam.* 85. Yellow upright larger Tree Primroſe with hairy Leaves, and a Fruit like Cloves.

3. JUSSIÆA *erecta glabra, floribus tetrapetalis octandriis ſeſſilibus. Flor. Zeyl.* 170. Smooth upright *Juſſiæa*, with 4 Petals, and 8 Stamina to the Flowers, which ſit cloſe to the Stalk. *Lyſimachia lutea non pappoſa, erecta, foliis glabris, fructu caryophylloide. Sloan. Cat. Jam.* 85. Yellow upright Tree Primroſe with ſmooth Leaves, and a Fruit like Cloves.

4. JUSSIÆA *caule erecto ramoſo glabro, floribus tetrapetalis octandriis ſeſſilibus, foliis lanceolatis. Juſſiæa* with an upright branching ſmooth Stalk, Flowers having 4 Petals, and 8 Stamina ſitting cloſe to the Stalk, and

Spear-ſhaped Leaves. *Onagra foliis perſicariæ amplioribus, parvo flore luteo. Plum. Cat.* 7. Tree Primroſe with a large Arſeſmart Leaf, and a ſmall yellow Flower.

5. Jussiæa *caule erecto ſimplici hirſuto, foliis lanceolatis, floribus pentapetalis decandriis ſeſſilibus. Juſſiæa* with a ſingle upright hairy Stalk, Spear-ſhaped Leaves, and crowned with Flowers, which have 5 Petals, and 10 Stamina ſitting cloſe to the Stalk. *Onagra erecta, caule rubro hirſuto, foliis oblongis, flore magno luteo. Houſt. Mſſ.* Upright Primroſe with a hairy Leaf of a reddiſh Colour, oblong Leaves, and a large yellow Flower.

The 1ſt Sort grows naturally at *Campeachy*, from whence the Seeds were ſent me by the late Mr. *Robert Millar*; this riſes with a ſhrubby Stalk, near 3 Feet high, ſending out ſeveral Side Branches, garniſhed with oblong hairy Leaves, placed alternate. The Flowers come out from the Side of the Stalks ſingly, having ſhort Foot Stalks; they have 4 ſmall yellow Petals, with 8 Stamina; theſe ſit upon the Germen which afterward becomes an oblong Seed Veſſel, crowned by the four-leaved Empalement, and has a great Reſemblance to the Cloves. This Plant flowers in *July* and *Auguſt*, and the Seeds ripen in *October*.

The 2d Sort grows naturally in *Jamaica*. The Seeds of this were ſent me by the late Dr. *Houſtoun*; this riſes with a hairy branching Stalk, 2 Feet high, and is garniſhed with narrow Spear-ſhaped Leaves, placed alternate. The Flowers come out toward the End of the Branches ſingly from the Wings of the Leaves, ſitting cloſe to the Stalk; they are compoſed of 5 pretty large yellow Petals, and 10 Stamina; theſe ſit upon a long Germen, which afterward becomes the Seed Veſſel, crowned by the Empalement; theſe are filled with ſmall Seeds. It flowers and Seeds about the ſame Time with the laſt.

The 3d Sort grows naturally in *Jamaica*, from whence the Seeds were ſent me with thoſe of the former Sort; this riſes with a ſmooth erect Stalk, 3 Feet high, garniſhed with long, narrow, ſmooth, Spear-ſhaped Leaves. The Flowers are large and yellow, ſitting cloſe to the Stalk; theſe are ſucceeded by long Seed Veſſels, ſhaped like thoſe of the other Sorts. It flowers and ſeeds at the ſame Time with the former.

The 4th Sort was ſent me from *Carthagena* by the late Dr. *Houſtoun*; this hath a branching ſmooth Stalk, near 3 Feet high, garniſhed with Spear-ſhaped Leaves, ſtanding on ſhort Foot Stalks. The Flowers are ſmall, yellow, and compoſed of 4 Petals, and 8 Stamina; theſe ſit very cloſe to the Stalk, and are ſucceeded by Seed Veſſels ſhaped like thoſe of the former Sorts.

The 5th Sort was ſent me from *La Vera Cruz*, by the late Dr. *Houſtoun*; this riſes with ſingle upright red Stalks 3 Feet high, which are hairy and channelled. The Leaves are Spear-ſhaped, and placed alternate on the Stalks, ſtanding nearer together than in any of the other Sorts. The Flowers come out from the Wings of the Leaves, toward the Top of the Stalk; they are compoſed of 5 large yellow Petals, and 10 Stamina, ſitting cloſe to the Stalks, and are ſucceeded by Seed Veſſels, 1 Inch long, and ſhaped like thoſe of the former Sorts.

The 1ſt, 2d, and 4th Sorts are annual Plants, at leaſt they are ſo in *England*; for if the Plants are raiſed early in the Spring, they will flower in *July*, and ripen their Seed the Beginning of *October*; and thoſe Plants raiſed later in the Spring, cannot be preſerved through the Winter, though they are placed in a warm Stove, nor do their Stalks ever grow ligneous, or ſhew any Signs of their being perennial in their native Country.

The 3d and 5th Sorts have continued through the Winter in the Bark Stove, but thoſe have been ſuch Plants as did not flower and ſeed the firſt Year; for after they had perfected Seeds, the following Summer the Plants decayed.

All theſe Sorts are propagated by Seeds, which ſhould be ſown early in the Spring, in Pots filled with a gentle loamy Soil, and plunged into a moderate hot Bed; but as theſe Seeds often lie a whole Year in the Ground, before they vegetate, the Earth muſt be kept moiſt, and the Glaſſes of the hot Bed ſhaded in the Heat of the Day; by this Method the Seeds may be brought ſoon to vegetate; when the Plants come up, and are fit to remove, they ſhould be each planted into a ſmall ſeparate Pot, filled with light loamy Earth, and plunged into a hot Bed of Tanners Bark, where they ſhould be ſhaded from the Sun till they have taken new Root, after which they ſhould have free Air admitted to them every Day, in Proportion to the Warmth of the Seaſon; they muſt alſo be frequently refreſhed with Water, but it muſt not be given to them in too great Plenty; when the Roots of the Plants have filled theſe ſmall Pots, the Plants ſhould be removed into others a Size larger; and if the Plants are too tall to ſtand under the Frames of the hot Bed, they ſhould be removed into the Bark Stove, where they may remain to flower and perfect their Seeds, for when the Plants riſe early in the Spring, and are brought forward in hot Beds, all the Sorts will flower and perfect their Seeds the ſame Year, which is better than to have them to keep through the Winter.

JUSTICIA. *Houſt. Nov. Gen. Lin. Gen. Pl.* 26. *Adhatoda. Tourn. Inſt. R. H.* 175. *Tab.* 79. So named by the late Dr. *Houſtoun*, in Honour of *James Juſtice*, Eſq; a great Lover of Gardening and Botany.

The *Characters* are,

The Empalement of the Flower is ſmall, and divided into 5 *acute Segments at the Top. The Flower hath* 1 *Petal, divided into* 2 *Lips, almoſt to the Bottom, which are entire. The upper Lip is raiſed Archways, and the under is reflexed. It hath* 2 *Awl-ſhaped Stamina, ſituated under the upper Lip, terminated by erect Summits, bifid at their Baſe. It hath an oblong Germen, ſupporting a ſlender Style, longer than the Petal, crowned by a ſingle Stigma. The Germen becomes an oblong Capſule with* 2 *Cells, divided by a Partition, which is contrary to the* 2 *Valves, which open with an Elaſticity, and caſt out the roundiſh Seeds.*

The *Species* are;

1. Justicia *foliis oblongo-ovatis hirſutis, ſeſſilibus, floribus ſpicatis alaribus, caule fruticoſo. Juſticia* with oblong, oval, hairy Leaves, ſitting cloſe to the Stalks, and Flowers growing in Spikes proceeding from the Side of the Stalks, which are ſhrubby. *Juſticia fruteſcens, floribus ſpicatis majoribus, uno verſu diſpoſitis. Houſt. Mſſ.* Shrubby *Juſticia* with larger Flowers growing in Spikes, ranged on one Side.

2. Justicia *caule erecto ramoſo hexangulari, foliis*

ovatis oppoſitis, bracteis cuneiformibus confertis. *Juſticia* with an erect branching Stalk, having ſix Angles, oval Leaves placed oppoſite, and Wedge-ſhaped ſmall Leaves (or Bracteæ) growing in Cluſters. *Juſticia annua hexangulari caule, foliis Circææ conjugatis, flore miniato. Houſt. Mſſ.* Annual *Juſticia* with an hexangular Stalk, Enchanters Nightſhade Leaves ſet by Pairs, and a Carmine Flower.

3. JUSTICIA *foliis ovato-lanceolatis, pediculatis, hirutis, bracteis cordatis acuminatis, caule fruticoſo.* *Juſticia* with oval Spear-ſhaped Leaves growing on Foot Stalks, Heart-ſhaped acute-pointed Bracteæ, and a ſhrubby Stalk. *Juſticia frutescens & hirſuta, foliis oblongis pediculis longiſſimis, flore rubro. Houſt. Mſſ.* Shrubby and hairy *Juſticia* with oblong Leaves growing on very long Foot Stalks, and a red Flower.

4. JUSTICIA *arborea, foliis lanceolato-ovatis, bracteis ovatis perſiſtentibus, corollarum galeâ concavâ. Flor. Zeyl.* 16. Tree *Juſticia* with oval Spear-ſhaped Leaves, oval permanent Bracteæ, and a concave Helmet to the Flower. *Adhatoda Zeylanenſium. H. L.* 742. *Adhatoda* of *Ceylon,* commonly called *Malabar* Nut.

5. JUSTICIA *fruticoſa, foliis lanceolatis integerrimis, pedunculis trifloris ancipitibus, bracteis calyce brevioribus. Lin. Sp. Pl.* 15. Shrubby *Juſticia* with entire Spear-ſhaped Leaves, Foot Stalks having 3 Flowers looking different Ways, and a Bractea ſhorter than the Empalement. *Adhatoda Indica, folio ſaligno, flore albo. Boerh. Ind. alt.* 1. 239. *Indian Adhatoda* with a Willow Leaf, and white Flower, commonly called Snap Tree.

6. JUSTICIA *ſpinoſa, foliis oblongo-ovatis emarginatis, caule fruticoſo ramoſo.* Prickly *Juſticia* with oblong oval Leaves, indented at their Edges, and a ſhrubby branching Stalk. *Adhatoda Antegoana, Lycii facie, ſpinoſa. Petiv.* Prickly *Adhatoda* of *Antigua,* with the Appearance of Boxthorn.

7. JUSTICIA *arborea, foliis lanceolato-ovatis ſeſſilibus, ſubtus tomentoſis, floribus ſpicatis congeſtis terminalibus.* Tree *Juſticia* with Spear-ſhaped oval Leaves, woolly on their under Side, and ſitting cloſe to the Stalks, with Spikes of Flowers, growing in Cluſters at the Ends of the Branches. *Adhatoda arborea, foliis oblongis, ſubtus villoſis, floribus ſpicatis albis. Houſt.* Tree *Adhatoda* with oblong Leaves, hairy on their under Side, and Spikes of white Flowers.

8. JUSTICIA *arborea, foliis lanceolato ovatis, bracteis ovatis deciduis mucronatis, corollarum galeâ reflexâ. Flor. Zeyl.* 17. Tree *Juſticia* with Spear-ſhaped oval Leaves, oval pointed Bracteæ, which fall off, and a reflexed Helmet to the Flowers. *Adhatoda ſpicâ longiſſimâ, flore reflexo. Burman. Zeyl.* 7. *Tab.* 4, f. 1. *Adhatoda* with a very long Spike, and a reflexed Flower.

The 1ſt Sort was diſcovered growing naturally at *La Vera Cruz,* by the late Dr. *Houſtoun,* who ſent the Seeds to *England*; this riſes with a ſhrubby brittle Stalk, 5 or 6 Feet high, ſending out many Branches, garniſhed with oblong oval Leaves, 2 Inches long, and 1 broad, which are hairy, and placed by Pairs oppoſite; from the Wings of the Leaves come out the Spikes of Flowers, reflexed like a Scorpion's Tail. The Flowers are large, of a Carmine Colour, and ranged on one Side of the Spike; theſe are ſucceeded by ſhort Pods about half an Inch long.

The 2d Sort was diſcovered by the ſame Gentleman, in the ſame Country; this is an annual Plant with an upright Stalk, having 6 Angles, which riſes 2 or 3 Feet high, dividing into many Branches, garniſhed with oval Leaves placed oppoſite, an Inch and a Half long, and 1 Inch broad; they are ſmooth, as are alſo the Stalks. At each Joint come out Cluſters of ſmall Wedge-ſhaped Leaves, by Dr. *Linnæus* termed Bracteæ, and long before the Stalks decay, moſt of the larger Leaves fall off, and there are only theſe ſmall Leaves remain. The Flowers are produced in ſmall Spikes, at the End of the Branches, ſitting very cloſe among the Leaves; they are of a beautiful Carmine Colour, and have but one Petal, which has two Lips. The upper Lip is arched, bending over the lower, which is alſo a little reflexed, but both are entire. The Flowers are ſucceeded by ſhort Wedge-ſhaped Capſules, opening Lengthways, incloſing 2 ſmall oval Seeds.

The 3d Sort was diſcovered by the ſame Gentleman at *Campeachy*; this riſes with a hairy ſhrubby Stalk, 4 or 5 Feet high, dividing into ſeveral Branches, garniſhed with oval, Spear-ſhaped, hairy Leaves, 4 Inches long, and 2 and a Half broad, ſtanding on Foot Stalks, above an Inch long, placed by Pairs oppoſite. At the Baſe of the Foot Stalks come out a Cluſter of ſmall Heart-ſhaped Leaves, ending in acute Points, termed Bracteæ. The Flowers come out in looſe Cluſters from the Wings of the Stalks, toward the End of the Branches; they are of a pale red Colour, and ſhaped like thoſe of the former Sort.

Theſe Plants are propagated by Seeds, which ſhould be ſown early in the Spring, in ſmall Pots filled with freſh light Earth, and plunged into a moderate hot Bed of Tanners Bark, obſerving to water the Earth gently as it appears dry. The Seeds of theſe Plants frequently lie a Year in the Ground, ſo that the Pots muſt not be diſturbed, if the Plants do not come up the ſame Year; but in the Winter ſhould be kept in the Stove, and the Spring following plunged into a freſh hot Bed, which will bring up the Plants if the Seeds were good. When the Plants begin to appear, the Glaſſes of the hot Bed ſhould be raiſed every Day, when the Weather is warm, to admit freſh Air to them. The Plants muſt alſo be frequently watered in warm Weather, but Water ſhould not be given in large Quantities while the Plants are young, becauſe they are then very tender, and ſubject to rot at the Bottom of their Stems, with much Moiſture.

When the Plants are about 2 Inches high, they ſhould be carefully taken up, and each tranſplanted into a ſeparate ſmall Pot filled with freſh light Earth, and then plunged into the hot Bed again, being careful to water and ſhade them until they have taken new Root, after which Time they ſhould have Air admitted to them every Day, in Proportion to the Warmth of the Seaſon, and they ſhould be duly watered every other Day in hot Weather.

As the Plants advance in their Growth, they ſhould be ſhifted into larger Pots, for if their Roots are too much confined, the Plants will not make any conſiderable Progreſs; but they ſhould not be over potted, for that will be of worſe Conſequence than under potting them, becauſe when they are planted in very large Pots, they will ſtarve and decay, without producing any

Flowers. They are too tender to endure the open Air in this Country, therefore they ſhould always remain in the hot Bed, being careful to let them have a due Proportion of Air in hot Weather; and the annual Sort ſhould be brought forward as faſt as poſſible in the Spring, that the Plants may flower early, otherwiſe they will not produce good Seeds in *England*.

The 1ſt and 3d Sorts ſhould remain in the hot Bed during the Summer Seaſon (provided there be Room under the Glaſſes, without being ſcorched;) but at *Michaelmas* they ſhould be removed into the Stove, and plunged into the Bark Bed, where they muſt remain during the Winter Seaſon, obſerving to keep them warm, as alſo to water them gently once or twice a Week, according as they ſhall require. The following Summer theſe Plants will flower, and abide ſeveral Years, but they rarely produce good Seeds in *Europe*.

The 4th Sort grows naturally in the Iſland of *Ceylon*, but has been long in the *Engliſh* Gardens, where it is commonly known at preſent by the Title of *Malabar* Nut, but was formerly called Beetle Nut, and was by ſome ſuppoſed to be the Tree of which the *Chineſe* chew the Leaves and Nuts; this, though a Native of ſo warm a Country, is hardy enough to live in a good Green-houſe in *England*, without any artificial Heat. It riſes here with a ſtrong woody Stalk, 12 or 14 Feet high, ſending out many ſpreading Branches, garniſhed with Spear-ſhaped oval Leaves, 6 Inches long, and 3 broad, placed by Pairs oppoſite. The Flowers are produced on ſhort Spikes at the End of the Branches, which are white, with ſome dark Spots; theſe appear in *July*, but are not ſucceeded by any Seeds in *England*.

This Sort may be propagated by Cuttings, which, if planted in Pots in *June* or *July*, and plunged into a very moderate hot Bed, will take Root, but they muſt be every Day ſcreened from the Sun, and if the external Air is excluded from them, they will ſucceed better than when it is admitted to them. It may alſo be propagated by laying down their young Branches, which will take Root in the Ground; theſe young Plants ſhould be put each into a ſeparate Pot, filled with ſoft loamy Earth, and placed in the Shade till they have taken new Root, then they may be placed in a ſheltered Situation during the Summer, but in Winter they muſt be houſed, and treated as Orange Trees, with only this Difference, that theſe require more Water.

The 5th Sort grows naturally in *India*; this riſes with a ſhrubby Stalk, from 3 to 4 Feet high, ſending out Branches on every Side from the Bottom, ſo as to form a Kind of Pyramid; theſe are covered with a white Bark, and are garniſhed with Spear-ſhaped entire Leaves, near 2 Inches long, and one third of an Inch broad; they are ſmooth, ſtiff, and of a deep green, ſtanding oppoſite. At the Baſe of the Foot Stalks come out Cluſters of ſmaller Leaves of the ſame Shape and Texture. The Flowers come out upon ſhort Foot Stalks from the Side of the Branches, each Foot Stalk ſupporting 1, 2, or 3 white Flowers, with long Empalements; theſe are ſucceeded by oblong Seed Veſſels, which, when ripe, caſt out their Seeds with an Elaſticity, from whence it had the Title of Snap Tree.

This is propagated by Cuttings during any of the Summer Months; they ſhould be planted in Pots filled with light loamy Earth, and plunged into a hot Bed which has loſt its great Heat, and ſhaded from the Sun, now and then gently refreſhed with Water, and not too much Air admitted to them. In about 2 Months the Cuttings will have taken Root, then they muſt be gradually inured to bear the open Air, into which they ſhould be removed, placing them in a ſheltered Situation, where they may ſtay till Autumn; but if they get Root pretty early in the Summer, it will be proper to ſeparate them each into a ſingle ſmall Pot, ſetting them in the Shade till they have taken new Root, after which they may be placed as before directed, but when it is late in the Seaſon before they take Root, it will be better to let them remain in the ſame Pots till the following Spring. In Winter theſe Plants muſt be placed in a warm Green-houſe, or in a moderately warm Stove, for they are impatient of Cold and Damp, nor will they thrive in too much Warmth; they will often require Water in Winter, but during that Seaſon it muſt be given them moderately; in Summer they muſt be removed into the open Air, but ſhould have a warm ſheltered Situation, and in warm Weather they muſt have Plenty of Water. This Plant flowers at different Seaſons, but never produces Fruit here.

The 6th Sort grows naturally in *Jamaica*, from whence the late Dr. *Houſtoun* ſent it to *England*; this riſes with many ſhrubby ſlender Stalks, about 5 Feet high, ſending out Branches on every Side their whole Length, which grow erect, and are covered with a whitiſh Bark, garniſhed with ſmall, oblong, oval Leaves, coming out two on each Side the Stalk oppoſite, and under the Leaves are placed at every Joint ſharp Thorns like thoſe of the Berberry; the Flowers come out ſingly from the Wings of the Leaves, they are ſmall and of a pale red Colour, ſhaped like thoſe of the other Sorts.

The 7th Sort was found by the late Dr. *Houſtoun*, growing naturally at *Campeachy*. This riſes with a ſtrong woody Stem 20 Feet high, dividing into many crooked irregular Branches, covered with a light brown Bark, garniſhed with Spear-ſhaped oval Leaves, near 4 Inches long and 2 broad, covered with a ſoft Down on their under Side. The Flowers grow in Spikes from the End of the Branches, 3, 4, or 5 of theſe Spikes ariſing from the ſame Point, the middle Spike being near 3 Inches long, and the others about half that Length. The Flowers are ſmall and white, but ſhaped like thoſe of the other Species.

The 8th Sort grows naturally at *Malabar* and in *Ceylon*; this riſes with a ſtrong woody Stem 10 or 12 Feet high, dividing into many Branches, garniſhed with Spear-ſhaped oval Leaves 5 Inches long, and 2 and a Half broad, of a lucid green, and placed by Pairs oppoſite. The Flowers grow in very long Spikes from the End of the Branches, they are of a greeniſh Colour with a Shade of blue; the Helmet of the Flower is reflexed.

Theſe 3 Sorts are propagated by Seeds, as the 3 firſt, and the Plants muſt be treated the ſame Way, eſpecially while they are young; but afterward the 8th Sort may be more hardily treated, when they have gotten Strength. This Sort may alſo be propagated by Cuttings, as the 5th Sort; and when the Plants are 2 or 3 Years old, they will thrive in a moderate Degree of Warmth in Winter, and in the Summer they may be placed abroad for 2 Months in the warmeſt Seaſon of the Year, but they ſhould have a warm ſheltered Situation, and when the Nights begin to grow cold, they muſt be removed into the Stove; but they muſt have free Air admitted to them at all Times when the Weather is warm. The other 2 Sorts ſhould conſtantly remain in the Bark Stove, and require the ſame Treatment as other tender Plants from the warmeſt Countries.

IXIA. *Lin. Gen. Pl.* 54. *Siſyrinchium. Com. Hort. Amſt.*

The *Characters* are,

It hath oblong permanent Spathæ (or Sheaths) which incloſe the Germen; the Flower has 6 oblong Spear-ſhaped Petals which are equal, and 3 Awl-ſhaped Stamina ſhorter than the Petals, ſituated at equal Diſtances, terminated by ſingle Summits. It hath an oval 3 cornered Germen ſituated below the Flower, ſupporting a ſingle Style the Length of the Stamina, crowned by a thick trifid Stigma; the Germen becomes an oval 3 cornered Capſule with 3 Cells, filled with roundiſh Seeds.

The *Species* are,

1. Ixia *foliis enſiformibus, floribus remotis. Hort. Upſ.* 16. *Ixia* with Sword-ſhaped Leaves, and Flowers ſtanding remote. *Bermudiana iridis folio majori flore croceo, eleganter punctato. Krauſ. Hort.* 25. *Tab.* 25. *Bermudiana* with a larger Iris Leaf, and a Saffron coloured Flower, beautifully ſpotted.

2. Ixia *floribus capitatis, ſpathis laceris. Lin. Sp. Pl.* 36. *Ixia* with Flowers growing in Heads, and ragged Sheaths. *Bermudiana Capenſis, capitulis lanuginoſis. Pet. Hort. Sicc.* 242. *Bermudiana* from the *Cape of Good Hope*, with woolly Heads.

3. Ixia *foliis gladiolatis, nervoſis, hirſutis, floribus ſpicatis terminalibus. Icon. Tab.* 155. *Fig.* 1. *Ixia* with Sword-ſhaped, hairy, veined Leaves, and Flowers growing in Spikes at the Ends of the Stalks.

4. Ixia *foliis lineari-gladiolatis, floribus alaribus & terminalibus. Icon. Tab.* 155. *Fig.* 2. *Ixia* with narrow Sword-ſhaped Leaves, and Flowers proceeding from the Sides and Tops of the Stalk.

5. Ixia *foliis gladiolatis glabris, floribus corymboſis terminalibus. Icon. Tab.* 156. *Ixia* with ſmooth Spear-ſhaped Leaves, and Flowers growing in a Corymbus terminating the Stalk. *Siſyrinchium Africanum majus, flore luteo maculâ notato. Olden.* Greater *African Siſyrinchium* with a yellow ſpotted Flower.

6. Ixia *foliis lineari-gladiolatis, floribus alternis, caule bulbifero. Ixia* with narrow Sword-ſhaped Leaves, Flowers placed alternate, and Stalks bearing Bulbs.

7. Ixia *foliis gladiolatis, floribus diſtantibus. Ixia* with Sword-ſhaped Leaves, and Flowers growing diſtant.

8. Ixia *foliis lineari-gladiolatis, floribus ſpicatis ſeſſilibus terminalibus. Ixia* with narrow Sword-ſhaped Leaves, and ſeſſile Flowers growing in Spikes at the Top of the Stalk.

The 1ſt Sort grows naturally in *India*, where the Stalks riſe 5 or 6 Feet high, but in *England* they are ſeldom more than half that Height. It hath a pretty thick fleſhy Root, divided in Knots or Joints of a yellowiſh Colour, ſending out many Fibres; the Stalk is pretty thick, ſmooth, and jointed, garniſhed with Sword-ſhaped Leaves a Foot long and 1 Inch broad, with ſeveral longitudinal Furrows, and embracing the Stalks with their Baſe, ending in acute Points; the upper Part of the Stalk divaricates into 2 ſmaller, with a Foot Stalk ariſing between them, which ſupports 1 Flower; the ſmaller Branches divaricate again in the ſame Manner into Foot Stalks, 2 Inches long, each ſuſtaining 1 Flower. At each of theſe Joints is a Spatha or Sheath embracing the Stalk, which at the lower Joints are 3 Inches long, but the upper are not more than 1 Inch, ending in acute Points and permanent; the Flowers are compoſed of 6 Petals which are equal, they are of a yellow Colour within, and variegated with dark red Spots; the Outſide is of an Orange Colour. Theſe appear in *July* and *Auguſt*, and in warm Seaſons are ſucceeded by the Seeds.

This Sort may be propagated either by Seeds, or parting the Roots: If by Seeds, they ſhould be ſown in Pots, and plunged into a moderate hot Bed, which will bring up the Plants much ſooner, than when they are ſown in the full Ground; when the Plants are fit to remove, they ſhould be each planted in a ſmall ſeparate Pot filled with ſandy Earth, and if they are placed under a Frame till they have taken good Root in the Pots, it will greatly forward their Growth; afterward they may be placed in the open Air in a ſheltered Situation, where they may remain till Autumn, when they muſt be placed under a Frame to ſcreen them from Froſt; and in the Spring, moſt of the Plants may be turned out of the Pots and planted in a warm Border, where they will abide through the common Winters very well, but in ſevere Froſts they are often killed, unleſs they are covered with Tan, or other Covering to keep out the Froſt, therefore a few of the Plants may be kept in Pots, and ſheltered under a Frame in Winter.

The Stalks and Leaves of this Plant decay to the Root in Autumn, ſo that if the Surface of the Ground about the Roots is covered 2 or 3 Inches thick with Tan, it will ſecure them from the Danger of Froſt; and in the Spring before the Roots ſhoot, will be the beſt Time to remove and part the Roots; but this ſhould not be done oftener than every third Year, for when they are often parted, they will be weak, and will not flower ſo well.

The 2d Sort grows naturally at the *Cape of Good Hope*; this is a low Plant, which riſes 3 or 4 Inches high; the Leaves are narrow and veined, the Flowers are ſmall, growing in a downy Head on the Top of the Stalk, but they make little Appearance, ſo are only kept for Variety.

The 3d Sort I raiſed from Seeds, which were ſent me from the *Cape of Good Hope*. This hath a round bulbous Root a little compreſſed, covered with a red Skin, from which ariſe 5 or 6 Sword-ſhaped Leaves about 3 or 4 Inches long, hairy, and with ſeveral longitudinal Furrows; theſe embrace each other at their Baſe, but ſpread aſunder at the Top; between theſe come out the Flower Stalk, which riſes 6 or 8 Inches high, is naked to the Top, and terminated by a Cluſter of Flowers, each having a Spatha or Hood, which dries and is permanent; the Flowers are of a deep blue Colour, and appear in *May*; theſe are ſucceeded by roundiſh three cornered Seed Veſſels with 3 Cells, filled with roundiſh Seeds which ripen in *July*, then the Leaves and Stalks decay.

The 4th Sort was raiſed from Seeds in the *Chelſea*

Garden, which came with thoſe of the former Sort. This hath a ſmall round bulbous Root, from which ariſe 4 or 5 narrow long Sword-ſhaped Leaves 6 or 7 Inches long; between theſe come out a very ſlender round Stalk about 10 Inches long, from the Side of which there comes out 1 or 2 Cluſters of Flowers, ſtanding on ſhort Foot Stalks, and at the Top of the Stalk, the Flowers grow in a looſe Spike; they are of a pure white, and ſhaped like thoſe of the other Species. Theſe appear in *May*, and the Seeds ripen in *July*.

The Seeds of the 5th Sort were ſent me from the *Cape of Good Hope*; this has an oval bulbous Root a little compreſſed, from which come up 3 or 4 narrow, thin, Sword-ſhaped Leaves, near a Foot long; the Flower Stalk riſes a little above the Leaves, it is very ſlender, naked, and terminated by a round Cluſter of Flowers, each having a Spatha or Hood; they are compoſed of 6 pretty large oblong Petals which are concave, and of a deep yellow Colour, each having a large black Spot at the Baſe. This flowers early in *May*, and the Seeds ripen the latter End of *June*.

The 6th Sort hath narrow Spear-ſhaped Leaves, about 6 or 7 Inches long; the Stalk riſes near a Foot and a Half high, garniſhed with 1 Leaf at each of the lower Joints, of the ſame Shape with the other but ſmaller; theſe embrace the Stalk with their Baſe, and ſtand erect; the upper Part of the Stalk is adorned with Flowers compoſed of 6 oblong oval Petals of a Sulphur Colour, placed alternate on the Stalk, which is bent at each Joint where the Flowers ſtand; the Flowers have 3 ſhort Stamina joined at their Baſe, terminated by long flat erect Summits; the Germen is ſituated under the Flower, ſupporting a long ſlender Style, crowned by a trifid Stigma; the Germen becomes a roundiſh Capſule with 3 Cells, filled with roundiſh ſmall Seeds. The Stalks at each of the lower Joints thruſt out ſmall Bulbs, which, if planted, will grow and produce Flowers.

The 7th Sort hath ſhorter and broader Leaves than the former, the Stalk is ſlender and furrowed, and at each of the lower Joints is garniſhed with 1 Leaf of the ſame Shape, embracing the Stalk with their Baſe; the Flowers come out toward the Top of the Stalk, at 2 or 3 Inches Diſtance, each Stalk ſupporting 2 or 3 Sulphur-coloured Flowers, each compoſed of 6 Spear-ſhaped Petals an Inch and a Half long, equal in their Size and regular in Poſition; they have a ſhort permanent Empalement, cut into 2 long and 2 ſhorter acute Segments; theſe are ſucceeded by round Capſules with 3 Cells, filled with round Seeds. This Sort flowers in *March*, and the Seeds ripen about 2 Months after.

The 8th Sort hath very ſmall round bulbous Roots, from which ariſe 3 or 4 long, ſlender, Graſs-like Leaves, of a dark green Colour and ſmooth; between theſe come out the Stalk, which is very ſlender and round, riſing a Foot and a Half high; at the Top the Flowers are collected in a Spike ſitting cloſe to the Stalk, each having a thin, dry, permanent Spatha or Sheath, which covers the Capſule after the Flower is fallen. The Flowers are of a pure white, and ſhaped like thoſe of the other Species, but ſmaller; they are ſucceeded by ſmall round Seed Veſſels with 3 Cells, each containing 2 or 3 round Seeds. It flowers the latter End of *May*, and the Seeds ripen in *July*.

There are ſome other Varieties of this Genus, which have flowered in the *Chelſea* Garden, differing only in the Colour of their Flowers, ſo are not ſuppoſed to be diſtinct Species; one of which is purple on the Outſide, and white within; another has white Flowers, with a blue Stripe on the Outſide of each Petal, and a third has white Flowers with yellow Bottoms. Theſe have already flowered in the *Chelſea* Garden, where there are many more, which have been ſince raiſed from Seeds, whoſe Flowers have not as yet appeared; and at the *Cape of Good Hope*, where theſe Plants grow naturally; there are more than 30 Varieties mentioned in a Catalogue of Dr. *Herman*'s. The Roots of moſt, if not all theſe Sorts, are frequently eaten by the Inhabitants at the *Cape of Good Hope*, who greatly eſteem them.

All the Sorts multiply very faſt by Offsets, ſo that when once obtained, there will be no Occaſion to raiſe them from Seeds; for the Roots put out Offsets in great Plenty, moſt of which will flower the following Seaſon, whereas thoſe from Seeds are 3 or 4 Years before they flower. Theſe Plants will not live through the Winter in the full Ground in *England*, ſo ſhould be planted in ſmall Pots filled with light Earth, and placed under a Frame in Winter, where they may be protected from Froſt, but in mild Weather ſhould enjoy the free Air; but during the Winter they muſt be guarded from Mice, who are very fond of theſe Roots, and if not prevented will devour them.

K.

KALI. *See* Salſola.

KALMIA. *Lin. Gen. Pl.* 582. *Chamærhododendros. Tourn. Inſt. R. H.* 604. *Tab.* 373.

The *Characters* are,

The Flower has a ſmall permanent Empalement cut into 5 Parts, and 1 Petal cut into 5 Segments, which ſpread open and are roundiſh. It hath 10 Stamina the Length of the Petal, declining in the Middle, terminated by oval Summits. In the Center is ſituated a roundiſh Germen, ſupporting a ſlender Style as long as the Petal, crowned by an obtuſe Stigma. The Germen becomes an oval or globular Capſule with 5 Cells, filled with very ſmall Seeds.

The *Species* are,

1. KALMIA *foliis lanceolato-ovatis nitidis, ſubtus ferrugineis, floribus corymboſis terminalibus.* *Kalmia* with ſhining Spear-ſhaped oval Leaves, of an Iron Colour on their under Side, and Flowers growing in round Bunches at the Ends of the Branches. *Chamærhododendros lauri*

folio ſempervirens, floribus bullatis corymboſis. Cateſb. Car. p. 3, 17. Ever-green Roſe Laurel with ſtudded Flowers growing in a round Bunch, commonly called in *America*, Mountain Laurel.

2. Kalmia *foliis lanceolatis, corymbis terminalibus. Kalmia* with Spear-ſhaped Leaves, and Flowers growing in Bunches terminating the Branches. *Chamædaphne foliis tini, floribus bullatis umbellatis. Cateſb. Carol.* 2. p. 98. *Tab.* 98. Dwarf Laurel with a *Tinus* Leaf, and ſtudded Flowers growing in Umbels, commonly called Ivy Tree in *America*.

3. Kalmia *foliis lanceolatis corymbis lateralibus. Lin. Gen. Nov.* 1079. *Kalmia* with Spear-ſhaped Leaves, and Flowers growing in round Bunches on the Sides of the Stalk. *Chamædaphne ſempervirens, foliis oblongis anguſtis, foliorum faſciculis oppoſitis. Cateſb. Carol.* 3. p. 17. Ever-green Dwarf Laurel, with oblong narrow Leaves growing in Bunches, which are placed oppoſite.

The 1ſt Sort grows naturally on Rocks and in barren Soils, in *Virginia* and *Penſylvania*, where it riſes with a branching Stalk of 15 or 16 Feet high, garniſhed with very ſtiff Leaves, 6 or 7 Inches long and 2 broad, of a lucid green on their upper Side, but when young are of a pale green on their under Side, and afterward as they are older, become of an Iron Colour; they have ſhort thick Foot Stalks, and ſtand without Order round the Branches; and between theſe the Buds are formed for the next Year's Flowers, at the Extremity of the Branches; theſe Buds ſwell to a large Size during the Autumn and Spring Months, till the Beginning of *June*, when the Flowers burſt out from their Empalements, forming a round Bunch (or Corymbus) ſitting very cloſe to the Branch; they are of a pale Bluſh Colour, changeing afterward to white, the Outſide of the Petal is of a Peach Colour. The Flower has but one Petal, whoſe Baſe is tubulous, but is deeply cut into 5 roundiſh Segments, one of which is ſtudded with yellow, green, and purple Spots, which are prominent and hairy; after the Flowers are paſt, the Germen in the Center becomes an oval Capſule, crowned by the permanent Style, having 5 Cells, full of very ſmall Seeds. This Shrub in its native Soil, continues flowering great Part of the Summer, and is one of the greateſt Ornaments to the Country; but as yet it is not ſo well naturalized to our Climate as could be wiſhed, though the Plants are not injured by the Cold, and ſome of them have flowered 3 Years paſt in the *Chelſea* Garden.

In the Country where this Shrub grows naturally, it ſends out Plenty of Suckers from the Roots, ſo that they form Thickets almoſt impaſſable; but here they have not as yet produced any Suckers, nor do the Seeds come to Maturity, ſo that the Plants are not very common in *England*; for the Seeds ſent from *America*, lie in the Ground a whole Year before the Plants appear, and afterward they make very ſlow Progreſs, which has diſcouraged moſt People from attempting to raiſe the Plants in that Method. The only Perſon who has ſucceeded well in raiſing them, is Mr. *James Gordon* of *Mile End*, who has a good Number of the Plants which have ariſen from Seeds.

Dr. *Linnæus* has ranged this Plant in his Genus of *Rhododendron*, but as the Flowers of this Plant ſpread open, and have as ſhort Tubes as any of thoſe in his Genus of *Kalmia*, and anſwer in all the other Characters thoſe of that Genus, it ſhould be there placed.

The 2d Sort is a Native of the ſame Country with the firſt, where it riſes from 6 to 12 Feet high, dividing into many ligneous Branches, very hard and cloſe, covered with a dark gray Bark; they are generally crooked and irregular, but cloſely garniſhed with ſtiff Leaves about 3 Inches long and 1 broad, of a lucid green, and placed without Order upon the Branches, ſtanding on ſlender Foot Stalks; the Flowers grow in looſe Bunches at the End of the Branches, on long Foot Stalks; they are of 1 Petal, having a ſhort Tube, but ſpread open at the Top, where it is cut into 5 Angles; the Flowers are of a bright red Colour when they firſt open, but afterward fade to a Bluſh or Peach Bloom Colour; theſe are ſucceeded by roundiſh compreſſed Seed Veſſels crowned by the permanent Style, divided into 5 Cells, filled with ſmall roundiſh Seeds. This Shrub flowers great Part of Summer in its native Country, but is not yet ſo well naturalized to this Country as to do the like; the only Place where I have ſeen this Shrub thrive well, is in the Gardens of his Grace the Duke of *Argyle*, at *Whitton* near *Hounſlow*.

The Leaves of this elegant Plant are ſuppoſed to have a noxious Quality, deſtroying Sheep and Oxen when they feed upon them, yet the Deer eat them with Impunity.

The 3d Sort grows naturally in *Penſylvania*, where it riſes 4 or 5 Feet high, but in *England* I have not ſeen any, more than half that Height; the fineſt Plants of this Kind which I have yet ſeen, are in the Gardens of his Grace the Duke of *Argyle*, before-mentioned.

The Leaves of this Sort are about 2 Inches long, and half an Inch broad in the Middle; they are ſtiff, of a lucid green, and ſtand oppoſite; ſometimes they are by Pairs at each Joint, and at others there are four, 2 on each Side, ſtanding on very ſhort Foot Stalks; the Flowers come out in Cluſters on every Side the Stalks; they are of a beautiful red Colour, and ſhaped like thoſe of the 2d Sort, but ſmaller; they are ſucceeded by ſhort roundiſh compreſſed Capſules with 5 Cells, crowned by the permanent Style, and filled with very ſmall Seeds. This Shrub in its native Country continues flowering moſt Part of Summer, and thoſe Plants at *Whitton* were in flower in the Beginning of *July*, when I was there, and the Beginning of *October* following I ſaw many freſh Flowers upon the ſame Shrubs.

Both theſe Sorts multiply by their creeping Roots in their native Soil, and at *Whitton* where they have ſtood unremoved a conſiderable Time, they put out Suckers in great Plenty; and as theſe Plants which come from Suckers, are much more likely to produce others than thoſe raiſed from Seeds, and will flower much ſooner, the Plants ſhould not be removed, but encouraged to ſpread their Roots and ſend out Suckers.

KARATAS, the Penguin or wild Ananas.

The *Characters* are,

It hath a tubulous Bell-ſhaped Flower, divided into 3 Parts at the Mouth, from whoſe Calyx ariſes the Pointal, fixed like a Nail in the hinder Part of the Flower, which afterward becomes a fleſhy almoſt conical Fruit, divided by Membranes into 3 Cells, full of oblong Seeds.

There is but one Sort of this Plant at preſent known, which is, Karatas *foliis altiſſimis, anguſtiſſimis & aculeatis. Plum. Nov. Gen.* The wild Ananas or Penguin.

Father *Plumier* has made a great Miſtake in the Figure and Deſcription of the Characters of this Plant, and the *Caraguata*; for he has joined the Flower of the *Caraguata* to the Fruit of the *Karatas*, and *vice verſà*; and this has led many Perſons into Miſtakes, who have joined the *Bromelia* and *Ananas* to this, making them all of the ſame Genus, whereas by their Characters they ſhould be ſeparated.

This Plant is very common in the *Weſt-Indies*, where the Juice of its Fruit is often put into Punch, being of a ſharp acid Flavour. There is alſo a Wine made of the Juice of this Fruit which is very ſtrong, but it will not keep good very long, ſo is only for preſent Uſe. This Wine is very intoxicating and heats the Blood, therefore ſhould be drank very ſparingly.

In *England* this Plant is preſerved as a Curioſity, for the Fruit ſeldom arrives to any Degree of Perfection in this Country, though it has often produced Fruit in *England*; but if it were to ripen as thoroughly here as in its native Country, it would be little valued on Account of its great Auſterity, which will often take the Skin off the Mouths and Throats of thoſe People, who eat it incautiouſly.

This Plant is propagated by Seeds, for though there are often Suckers ſent forth from the old Plants, they come out from between the Leaves, and are ſo long, ſlender, and ill-ſhapen, that if they are planted, they ſeldom make regular Plants. Theſe Seeds ſhould be ſown early in Spring, in ſmall Pots filled with light rich Earth, and plunged into a hot Bed of Tanners Bark. When the Plants are ſtrong enough to tranſplant, they ſhould be carefully taken up, each planted into a ſeparate Pot filled with light rich Earth, and plunged into the hot Bed again, obſerving to refreſh them frequently with Water, until they have taken new Root, after which Time they ſhould have Air and Water in Proportion to the Warmth of the Seaſon. In this Bed the Plants may remain till *Michaelmas*, at which Time they ſhould be removed into the Stove, and plunged into the Bark Bed, where they ſhould be treated as the Ananas.

Theſe Plants will not produce their Fruit in *England* until they are 3 or 4 Years old, ſo they ſhould be ſhifted into larger Pots, as the Plants advance in their Growth; for if their Roots are too much confined, they will make but little Progreſs. They ſhould alſo be placed at a pretty great Diſtance from each other, for their Leaves will be 3 or 4 Feet long, which, turning downward, occupy a large Space.

The Leaves of this Plant are ſtrongly armed with crooked Spines, which renders it very troubleſome to ſhift or handle the Plants; for the Spines catch hold of whatever approaches them by their crooked Form, being ſome bent one Way, and others the reverſe, ſo that they catch both Ways, and tear the Skin or Clothes of the Perſons who handle them, where there is not the greateſt Care taken of them.

The Fruit of this Plant is produced in Cluſters, growing upon a Stalk about 3 Feet high, and having generally a Tuft of Leaves growing on the Top, has, at firſt Sight, the Appearance of a Pine Apple; but, when cloſer viewed, they will be found to be a Cluſter of oblong Fruit, each being about the Size of a Finger.

A KATKIN is an Aggregate of Summits, hanging down in Form of a Rope, or Cat's Tail, as in the Sallow, Hazel, Birch, *&c.* and is called in *Latin*, *Iulus*.

KOEMPFERIA. *Lin. Gen. Pl.* 7.

The *Characters* are,

It hath a ſingle Spatha (or Sheath) of 1 *Leaf; the Flower hath* 1 *Petal, with a long ſlender Tube, divided in* 6 *Parts above;* 3 *of them are alternately Spear-ſhaped and equal, the other are oval, and at Bottom cut into* 2 *Parts which are vertically Heart-ſhaped. It hath but* 1 *Stamen, which is membranaceous, oval, and indented, terminated by a linear Summit, faſtened to it all the Length, ſcarcely emerging out of the Tube of the Petal. It hath a round Germen ſupporting a Style the Length of the Tube, crowned by an obtuſe Stigma; the Germen becomes a roundiſh* 3 *cornered Capſule with* 3 *Cells, filled with Seeds.*

We have but one *Species* of this Genus at preſent in *England*, *viz.*

Koempferia *foliis ovatis ſeſſilibus. Flor. Zeyl.* 8. *Kæmpferia* with oval Leaves ſitting cloſe to the Root. *Katsjuli Kelengu. Hort. Mal.* and the *Wanhom. Kæmpf. Amæn.* 901. Galangale.

This Plant was titled by Dr. *Linnæus*, from Dr. *Kæmpfer*, a *German* Phyſician, who travelled in *India* and *Perſia*, and has publiſhed an Account of many curious Plants which he had obſerved in thoſe Countries, and among them, he has given a Figure and Deſcription of this, by the *Indian* Title *Wanhom*.

This Plant is a Native in the *Eaſt-Indies*, where the Root is greatly uſed in Medicine as a Sudorifick, and it is reckoned carminative. It hath much the Scent of green Ginger, when taken out of the Ground; the Roots are divided into ſeveral fleſhy Tubers, which are ſometimes jointed, and grow about 4 or 5 Inches long; the Leaves are oval, being about 4 Inches long, and 2 broad; theſe are without Foot Stalks, growing cloſe to the Root, and ſeem as if ſet on by Pairs, ſpreading open each Way; and from between theſe Leaves the Flowers are produced ſingly, having no Foot Stalks, but are cloſely embraced by the Leaves; the Flowers are white, having a bright purple Bottom. Theſe are not ſucceeded by any Fruit in *England*.

This Plant being a Native of hot Countries, will not bear the open Air in *England*, ſo requires a warm Stove to preſerve it through the Winter; but as the Leaves decay in the Autumn, the Plants ſhould not have too much Wet while they are in an unactive State. If theſe Plants are placed in the Bark Stove, and treated as the Ginger, they will thrive, and produce Plenty of Flowers every Summer. It is propagated by parting the Roots, the beſt Time for this is in Spring, juſt before they begin to put out their Leaves.

KETMIA. *See* Hibiſcus.

KIGGELARIA. *Lin. Gen. Pl.* 1001. *Laurus. Sterb.* We have no *Engliſh* Title for this Plant. It was named by Dr. *Linnæus*, in Honour of Dr. *Kiggeler*, who publiſhed a Catalogue of *Beaumont*'s Garden in *Holland*.

The *Characters* are,

The male and female Flowers are ſituated on different Trees; the male Flowers have an Empalement of 1 *Leaf,* *cut into 5 concave Segments, and 5 concave Petals, ſhaped like a Pitcher; each of the Petals have a Honey Gland faſtened to their Baſe, which have 3 obtuſe Lobes and are coloured; they have 10 ſmall Stamina, terminated by oblong Summits. The female Flowers have Empalements and Petals like the male, but no Stamina. In the Center is ſituated a roundiſh Germen, ſupporting 5 Styles, crowned by obtuſe Stigmas. The Germen becomes a rough globular Fruit with a thick Cover, having 1 Cell, filled with angular Seeds.*

We have but one *Species* of this Genus, *viz.*

KIGGELARIA *Hort. Cliff.* 462. *fol.* 29. This is the *Euonymo-affinis Æthiopica ſempervirens, fructu globoſo ſcabro, foliis ſalicis rigidis ſerratis. H. L.* 139. An *Ethiopian* ever-green Plant reſembling the Spindle Tree, with a rough globular Fruit, and ſtiff ſawed Willow Leaves.

This Plant grows naturally at the *Cape of Good Hope*, where it riſes to be a Tree of middling Stature; but as it will not live in the open Air here, they cannot be expected to grow to a great Magnitude in *England*. There are Plants of it in the *Chelſea* Garden upward of 10 Feet high, with ſtrong woody Stems and pretty large Heads; the Branches have a ſmooth Bark, which is firſt green, but afterward changes to a purpliſh Colour; the Leaves are about 3 Inches long and 1 broad, of a light green Colour, and ſawed on their Edges, ſtanding on ſhort Foot Stalks alternately. The Flowers come out in Cluſters from the Side of the Branches, and hang downward; they are of an herbaceous white Colour, and appear in *May*, at which Time the Plants are thinly garniſhed with Leaves, for moſt of the old Leaves drop juſt before the new ones appear. The male Flowers fall away ſoon after their Farina is ſhed, but the female Flowers are ſucceeded by globular Fruit about the Size of common red Cherries; the Cover of theſe is very rough, and of a thick Conſiſtence, opening in 4 Parts at the Top; to each of theſe adhere many ſmall angular Seeds. Theſe Fruit have grown to their full Size in the *Chelſea* Garden, but the Seeds never came to Maturity.

Theſe Plants are not very common in *Europe*, being very difficult to propagate; for when any of the young Branches are laid down, they are 2 Years before they put out Roots, and ſcarce one in five will then have any Roots; nor do the Cuttings ſucceed better, for not one in twenty of them will take Root, when planted with the utmoſt Care: The beſt Time to plant the Cuttings is in the Spring, juſt before the Plants begin to ſhoot; theſe ſhould be planted in Pots filled with a ſoft loamy Earth, and plunged into a very moderate hot Bed, covering them cloſe with a Glaſs, to exclude the Air from them, and ſhade them every Day from the Sun; they ſhould have very little Water after their firſt planting. If any of them grow, they ſhould be planted into ſeparate ſmall Pots, filled with loamy Earth, and may be expoſed to the Air in a ſheltered Situation till Autumn, when they muſt be removed into the Green-houſe, and treated as Orange Trees.

KITCHEN GARDEN. A good Kitchen Garden is almoſt as neceſſary to a Country Seat, as a Kitchen to the Houſe; for without one, there is no Way of being ſupplied with a great Part of neceſſary Food, the Markets in the Country being but poorly furniſhed with eſculent Herbs, and thoſe only upon the Market Days, which are ſeldom oftener than once a Week; ſo that unleſs a Perſon has a Garden of his own, there will be no ſuch Thing as procuring them freſh, in which their Goodneſs conſiſts: nor can any Variety of theſe be had in the Country Markets, therefore whoever propoſes to reſide in the Country, ſhould be careful to make Choice of a proper Spot of Ground for this Purpoſe; and the ſooner that is made and planted, the Produce of it will be earlier in Perfection; for Fruit Trees and Aſparagus require 3 Years to grow, before any Produce can be expected from them; ſo that the later the Garden is made, the longer it will be before a Supply of theſe Things can be had for the Table. And although the Uſefulneſs of this Garden is acknowledged by almoſt every one, yet there are few who make a proper Choice of Soil and Situation for ſuch a Garden; the modern Taſte, which is, perhaps, carried to as extravagant Lengths, in laying open and throwing every Obſtruction down, as the former Cuſtom of incloſing within Walls was ridiculous; ſo that now one frequently ſees the Kitchen Garden removed to a very great Diſtance from the Houſe and Offices, which is attended with great Inconveniencies; and often ſituated on a very bad Soil, ſometimes too moiſt, and at others without Water, ſo that there is a great Expence in building Walls and making the Garden, where there can be little Hopes of Succeſs.

Nor will a Kitchen Garden be well attended to, when it is ſo ſituated as to be out of Sight of the Poſſeſſor, eſpecially if the Gardener has not a Love and Value for it, or if it lies at a great Diſtance from his Habitation, or the other Parts of the Garden; for when it ſo happens, a great Part of the Labourer's Time will be loſt in going from one Part to the other: Therefore, before the general Plan of the Pleaſure Garden is ſettled, a proper Piece of Ground ſhould be choſen for this Purpoſe, and the Plan ſo adapted, that the Kitchen Garden may not become offenſive to the Sight, which may be effected by proper Plantations of Shrubs to ſcreen the Walls; and through theſe Shrubs may be contrived ſome winding walks, which will have as good an Effect as thoſe now commonly made in Gardens for Pleaſure only. In the Choice of the Situation, if it does not obſtruct the View of better Objects, or ſhut out any material Proſpect, there can be no Objection to the placing it at a reaſonable Diſtance from the Houſe or Offices; for as particular Things may be wanted for the Kitchen, which were not thought of at the Time when Directions were given to the Gardener what to bring in, ſo if the Garden is ſituated at a great Diſtance from the Houſe, it will be found very inconvenient to ſend thither as often as Things are wanting: Therefore it ſhould be contrived as near the Stables as poſſible, for the Conveniency of carrying the Dung thither; which, if at a great Diſtance, will add to the Expence of the Garden.

As to the Figure of the Ground, that is of no great Moment, ſince in the Diſtribution of the Quarters all Irregularities may be hid; though if you are at full Liberty, an exact Square or an Oblong, is preferable to any other Figure.

The great thing to be conſidered is, to make Choice of a good Soil, not too wet nor over dry, but of a middling Quality; nor ſhould it be too ſtrong or ſtubborn, but of a pliable Nature, and eaſy to work; and if the Place where you intend to make the Kitchen Garden ſhould not be level, but high in one part and low in another, I would by no Means adviſe the levelling it; for by this Situation you will have an Advantage which could not be obtained on a perfect Level, which is, the having one Part of dry Ground for early Crops, and the low Part for late Crops, whereby the Kitchen may be the better ſupplied throughout the Seaſon with the various Sorts of Herbs, Roots, *&c.* And in very dry Seaſons, when in the upper part of the Garden the Crops will greatly ſuffer with Drought, then the lower Part will ſucceed, and ſo *vice verſâ*; but I would by no Means direct the chooſing a very low moiſt Spot of Ground for this Purpoſe; for although in ſuch Soils Garden Herbs are commonly more vigorous and large in the Summer Seaſon, yet they are ſeldom ſo well taſted or wholeſome as thoſe which grow upon a moderate Soil; and eſpecially ſince in this Garden your choice Fruits ſhould be planted, it would be wrong to have a very wet Soil.

This Garden ſhould be fully expoſed to the Sun, and by no means overſhadowed with Trees, Buildings, *&c.* which are very injurious to your Kitchen Plants and Fruit Trees; but if it be defended from the North Wind by a diſtant Plantation, it will greatly preſerve your early Crops in the Spring; as alſo from the ſtrong South Weſt Winds, which are very hurtful in Autumn to Fruit and Garden Herbs. But theſe Plantations ſhould not be too near nor very large, for I have generally found where Kitchen Gardens are placed near Woods or large Plantations, they have been much more troubled with Blights in the Spring, than thoſe which have been more expoſed.

The Quantity of Ground neceſſary for a Kitchen Garden muſt be proportioned to the Largeneſs of the Family, or the Quantity of Herbs deſired: For a ſmall Family, one Acre of Ground may be ſufficient; but for a large Family, there ſhould not be leſs than three or four Acres; becauſe, when the Ground is regularly laid out, and planted with Eſpaliers of Fruit Trees, as will hereafter be directed, this Quantity will be found little enough, notwithſtanding what ſome Perſons have ſaid on this Head.

This Ground muſt be walled round, and if it can be conveniently contrived, ſo as to plant both Sides of the Walls which have good aſpects, it will be a great Addition to the Quantity of Wall Fruit: And thoſe Slips of Ground which are without Side of the Walls, will be very uſeful for planting Gooſeberries, Currants, Strawberries, and ſome Sorts of Kitchen Plants, ſo that they may be rendered equally uſeful with any of the Quarters within the Walls; but theſe Slips ſhould not be too narrow, leſt the Hedge, Pale, or Plantation of Shrubs, which incloſe them, ſhould ſhade the Borders where the Fruit Trees ſtand: The leaſt Width of theſe ſlips ſhould be 25 or 30 Feet, but if they are double that, it will be yet better, and the Slips will be more uſeful, and the Fruit Trees will have a larger Scope of good Ground for their Roots to run. Theſe Walls ſhould be built about 12 Feet high, which will be a ſufficient Height for any Sort of Fruit. If the Soil where you intend to place your Kitchen Garden be very ſtrong, then you ſhould plough or dig it 3 or 4 Times before you plant any Thing therein; and if you throw it up in Ridges to receive the Froſt in Winter, it will be of great Service to meliorate and looſen its Parts.

The Manure moſt proper for ſuch Soils, is Sea Coal Aſhes, and the Cleanſing of Streets or Ditches, which will render it light much ſooner than any other Dung or Manure; and the greater the Quantity of Aſhes the better, eſpecially if the Ground be cold; and where theſe Aſhes are not to be obtained in Plenty, Sea Sand is very proper, or rotten Wood, or the Parts of Vegetables rotted are very good; all which will greatly looſen the Soil, and cauſe it to be not only eaſier to work, but alſo more advantageous for the Growth of Plants.

But, on the contrary, if your Soil be light and warm, you ſhould manure it with rotten Neats Dung, which is much preferable to any other for hot Soils; but if you uſe Horſe Dung it muſt be well rotted, otherwiſe it will burn up the Crops upon the firſt hot dry Weather.

The Soil of this Garden ſhould be at leaſt 2 Feet deep, but if deeper it will be ſtill better, otherwiſe there will not be depth enough for many Sorts of eſculent Roots, as Carrots, Parſneps, Beets, *&c.* which run down pretty deep in the Ground, and moſt other Sorts of eſculent Plants delight in a deep Soil; and many Plants, whoſe Roots appear ſhort, yet if their Fibres by which they receive their Nouriſhment are traced, they will be found to extend to a conſiderable Depth in the Ground; ſo that when theſe are ſtopped by meeting with Gravel, Chalk, Clay, *&c.* the Plants will ſoon ſhew it, by their Colour and ſtinted Growth.

You ſhould alſo endeavour to have a Supply of Water in the different Parts of the Garden, which, if poſſible ſhould be contained in large Baſons or Reſervoirs, where it may be expoſed to the open Air and Sun, that it may be ſoftened thereby; for Water taken out of Wells, *&c.* juſt as it is uſed, is by no Means proper for any Sort of Plants.

In the Diſtribution of this Garden, after having built the Walls, you ſhould lay out Banks or Borders under them, which ſhould be at leaſt 8 or 10 Feet broad, whereby the Roots of the Fruit Trees will have greater Liberty than in ſuch Places where the Borders are not above 3 or 4 Feet wide; and upon theſe Banks you may ſow many Sorts of early Crops, if expoſed to the South; and upon thoſe expoſed to the North, you may have ſome late Crops; but I would by no Means adviſe the planting any Sort of deep rooting Plants too near the Fruit Trees, eſpecially Peas and Beans; though for the advantage of the Walls, to preſerve them in Winter, and to bring them forward in the Spring, the Gardeners in general are too apt to make uſe of thoſe Borders, which are near the beſt aſpected Walls, to the great Prejudice of their Fruit Trees; but for theſe Purpoſes it is much better to have ſome Reed Hedges fixed in ſome of the warmeſt Quarters, under which you ſhould ſow and plant early Peas, Beans, *&c.* where they will thrive as well as if planted under a Wall, and thereby your Fruit Trees will be entirely freed from ſuch troubleſome Plants.

Then you ſhould proceed to dividing the Ground out into Quarters, which muſt be proportioned to the Largeneſs of the Garden: but I would adviſe never to make them too ſmall, whereby yonr Ground will be loſt in Walks; and the Quarters being encloſed by Eſpaliers of Fruit Trees, the Plants therein will draw up ſlender, and never arrive to half the Size they would do in a more open Expoſure.

The Walks of this Garden ſhould be alſo proportioned to the Size of the Ground, which in a ſmall Garden ſhould be 6 Feet, but in a large one 10; and on each Side of the Walk ſhould be allowed a Border 3 or 4 Feet wide between the Eſpalier and the Walk, whereby the Diſtance between the Eſpaliers will be greater, and the Borders being kept conſtantly worked and manured, will be of great Advantage to the Roots of the Trees; and in theſe Borders may be ſown ſome ſmall Sallad, or any other Herbs, which do not continue long or root deep, ſo that the Ground will not be loſt.

The Breadth of theſe middle Walks which I have here aſſigned them, may by many Perſons be thought too great; but my Reaſon for this is to allow proper Room between the Eſpaliers, that they may not ſhade each other, or their Roots interfere and rob each other of their Nouriſhment; but where the Walks are not required of this Breadth, it is only enlarging the Borders on each Side, and ſo reducing the Walks to the Breadth deſired.

But the Walks of theſe Gardens ſhould not be gravelled, for as there will conſtantly be Occaſion to wheel Manure, Water, *&c.* upon them, they would ſoon be defaced, and rendered unſightly; nor ſhould they be laid with Turf, for in green Walks, when they are wheeled upon, or much trodden, the Turf is ſoon deſtroyed, and thoſe Places where they are much uſed, become very unſightly alſo, therefore the beſt Walks for a Kitchen Garden are thoſe which are laid with a binding Sand; but where the Soil is ſtrong and apt to detain the Wet, there ſhould be ſome narrow under Ground Drains made by the Side of the Walks, to carry off the Wet, otherwiſe there will be no uſing the Walks in bad Weather; and where the Ground is wet, if ſome Lime Rubbiſh, Flints, Chalk, or any ſuch Material as can be procured with the leaſt Expence, is laid at the Bottom of theſe Walks; and if neither of theſe can be had, a Bed of Heath or Furze laid, and the Coat of Sand laid over it, the Sand will be kept drier, and the Walks will be ſound and good in all Seaſons. Theſe Sand Walks are by much the eaſieſt kept of any, for when either Weeds or Moſs begin to grow, it is but ſcuffling them over with a *Dutch* Hoe in dry Weather, and raking them over a Day or two after, and they will be as clean as when firſt laid.

The beſt Figure for the Quarters to be diſpoſed into, is a Square or an Oblong, where the Ground is adapted to ſuch a Figure; otherwiſe they may be triangular, or of any other Shape, which will be moſt advantageous to the Ground.

When the Garden is laid out in the Shape intended, if the Soil is ſtrong, and ſubject to detain the Moiſture, or is naturally wet, there ſhould always be under Ground Drains made, to carry off the Wet from every Quarter of the Garden, for otherwiſe moſt Sorts of Kitchen Plants will ſuffer greatly by Moiſture in Winter; and if the Roots of the Fruit Trees get into the Wet, they will never produce good Fruit, ſo that there cannot be too much Care taken to let off all ſuperfluous Moiſture from the Kitchen Garden.

Theſe Quarters ſhould be conſtantly kept clear from Weeds, and when any Part of the Ground is unoccupied, it ſhould always be trenched up into Ridges, that it may ſweeten and imbibe the nitrous Particles of the Air, which is of great Advantage to all Sorts of Land, and the Ground will then be ready to lay down whenever it is wanted.

The Ground in theſe Quarters ſhould not be ſown or planted with the ſame Crop two Years together, but the Crops ſhould be annually changed, whereby they will prove much better than when they conſtantly grow upon the ſame Spot. Indeed the Kitchen Gardeners near *London*, where the Land is dear, are often obliged to put the ſame Crop upon the Ground for two or three Years together; but then they dig and manure their Land ſo well every Year, as to render it almoſt new; though notwithſtanding all this, it is conſtantly obſerved, that freſh Land always produces the beſt Crops.

In one of theſe Quarters, which is ſituated neareſt to the Stables, and beſt defended from the cold Winds, or if either of the Slips without the Garden Wall, which is well expoſed to the Sun, lies convenient, and is of a proper Width, that ſhould be preferred, for a Place to make hot Beds for early Cucumbers, Melons, *&c.* The Reaſons for my giving the Preference to one of theſe Slips, is, firſt, there will be no Dirt or Litter carried over the Walks of the Kitchen Garden in Winter and Spring, when the Weather is generally wet, ſo that the Walks will be rendered unſightly; ſecondly, the View of the hot Beds will be excluded from Sight; and laſtly, the Convenience of carrying the Dung into theſe Slips, for by making a Gate in the Hedge, or Pale, wide enough for a ſmall Cart to enter, it may be done with much leſs Trouble than that of barrowing it through the Garden; and where there can be a Slip long enough to contain a ſufficient Number of Beds for 2 or 3 Years, it will be of great Uſe, becauſe by Shifting the Beds annually, they will ſucceed much better than when they are continued for a Number of Years on the ſame Spot of Ground; and as it will be abſolutely neceſſary to fence this Melon Ground round with a Reed Hedge, it may be ſo contrived as to move away in Pannels, and then that Hedge which was on the upper Side the firſt Year, being carried down to a proper Diſtance below that which was the lower Hedge, and which may remain, there will be no Occaſion to remove more than one of the croſs Hedges in a Year, therefore I am perſuaded, whoever will make Trial of this Method, will find it the moſt eligible.

The moſt important Points of general Culture conſiſt in well digging and manuring the Soil, and giving a proper Diſtance to each Plant, according to their different Growths (which is conſtantly exhibited in their ſeveral Articles in this Book;) and alſo in keeping them clear from Weeds, for if Weeds are permitted to grow until their Seeds are ripe, they will ſhed upon the Ground, and fill it ſo as not to be gotten out again in ſeveral Years. You ſhould alſo obſerve to keep your Dunghills always clear from Weeds, for it will be to little Purpoſe to keep the Garden clean, if this is not obſerved; for the Seeds falling among the Dung, will be brought into the Garden, whereby there will be a conſtant Supply of Weeds yearly introduced, to the no ſmall Damage of your Plants, and a perpetual Labour occaſioned to extirpate them again. Another Thing abſolutely neceſſary to be obſerved, is, to carry off all the refuſe Leaves of Cabbages, the Stalks of Beans, and Haulm of Peas, as ſoon as they are done with, for the ill Scent which moſt People complain of in Kitchen Gardens, is wholly occaſioned by theſe Things being ſuffered to rot upon the Ground; therefore when the Cabbages are cut, all Leaves ſhould be carried out of the Garden while they are freſh, at which Time they may be very uſeful for feeding Hogs, or other Animals, and this will always keep the Garden neat, and free from ill Scents. As for all other neceſſary Directions, they will be found in the Articles of the ſeveral Sorts of Kitchen Plants.

KLEINIA. *See* Cacalia.

KNAUTIA. *Lin. Gen. Pl.* 109. *Lychni-Scabioſa. Boerh. Ind.* 1. 131.

This Name was applied to this Plant by Dr. *Linnæus*, in Honour to the Memory of Dr. *Chriſtian Knaut*, who publiſhed a Method of claſſing Plants.

The *Characters* are,

It hath ſeveral floſcular Flowers incloſed in one common cylindrical Empalement; theſe ſeveral Floſcules have their Petals ranged ſo as to appear a regular Flower, but each ſeparate Floſcule is irregular, conſiſting of 1 *Leaf, which is tubulous, but ſpreads open at the Top, where it is cut into* 4 *Segments, the outer one being the largeſt; in the Bottom of each Floret, is ſituated the Pointal, attended by* 4 *long Stamina. The Pointal afterward changes to a ſingle oblong naked Seed.*

There is but one *Species* of this Plant at Preſent known, *viz.*

Knautia. *Lin. Hort. Cliff.* This Plant is very near akin to the Scabious, under which Genus it has been ranged by ſeveral Botaniſts, but the Appearance of the Flower at firſt Sight being like a Lychnis, Dr. *Boerhaave* ſeparated it from the Scabious, and gave it the Title of *Lychni Scabioſa*, which being a compound Name, Dr. *Linnæus* has altered it to this of *Knautia.*

re This is an annual Plant, the Seeds of it were brought from the *Archipelago*, where it is a Native; but when it is allowed to ſcatter its Seeds in a Garden, it will propagate itſelf in as great Plenty as if it were a Native of *England*; and theſe autumnal Plants, which ariſe from the ſcattered Seeds, will grow much ſtronger than thoſe ſown in the Spring. All the Culture this Plant requires is, to keep it clear from Weeds, for it will thrive on almoſt any Soil, or any Situation.

KNIGHTS CROSS, or SCARLET CROSS is the Scarlet Lychnis. *See* Lychnis.

L.

LABIATE FLOWERS are ſuch as have Lips, or more properly, a labiated Flower, is an irregular monopetalous Flower, divided into 2 Lips; the upper is called the Creſt, the under, the Beard; ſometimes the Creſt is wanting, and then the Style and Chives ſupply its Place, as in the Ground Pine, Scordium Bugula, *&c.* but the greateſt Part have 2 Lips, which, in ſome Species the upper Lip is turned upwards, as the Ground Ivy, *&c.* but moſt uſually the upper Lip is convex above, and turns the hollow Part down to the lower Lip, and ſo repreſents a Kind of Helmet, or Monk's Hood, from whence theſe are called Galeate, Cucullate, and Galericulate Flowers, in which Form are moſt of the verticillate Plants.

LABLAB. *See* Phaſeolus.

LABRUM VENERIS. *See* Dipſacus.

LABRUSCA. *See* Vitis.

LABURNUM. *See* Cytiſus.

LABYRINTH [Λαβύρινθος,], a winding, mazy, and intricate Turning, through a Wilderneſs, or Wood.

The Deſign of a Labyrinth is, to cauſe an intricate and difficult Labour to find out the Center, and the Aim is, to make the Walks ſo intricate, that a Perſon may loſe himſelf in them, and meet with as great a Number of Stops and Diſappointments as is poſſible, they being the moſt valuable that are the moſt intricate.

As to the Contrivance of them, it will not be poſſible to give Directions in Words, there are ſeveral Plans and Deſigns in Books of Gardening; they are rarely met with but in great and noble Gardens, as *Hampton-Court*, *&c.*

There are two Ways of making them, the firſt is with ſingle Hedges; this Method has been practiſed in *England.* Theſe, indeed, may be beſt, where there is but a ſmall Spot of Ground to be allowed for making them, but where there is Ground enough, the double are moſt eligible.

Double ones, or thoſe that are made with double Hedges of a conſiderable Thickneſs of Wood between Hedge and Hedge, are approved as much better than ſingle ones, as is the Manner of making them in *France*, and other Places, of all which, that of *Verſailles* is allowed by all to be the nobleſt of its Kind in the World.

It is an Errour in Labyrinths in making them too narrow, for by that Means the Hedges muſt be kept cloſe clipt; whereas, if the Walks are made wider, according to the foreign Practice, they will not ſtand in need of it.

The Walks are made with Gravel, uſually ſet with Hornbeams; the Palliſades ought to be ten, twelve, or Fourteen Feet high; the Hornbeam ſhould be kept cut, and the Walks rolled.

LACRYMA JOBI [ſo called, becauſe the Seeds of it reſembles a Tear, or Drop.] Job's Tears. *See* Coix.

LACTIFEROUS PLANTS are ſuch as abound

with a milky Juice, as the *Tithymalus*, *Sonchus*, *Lactuca*, &c.

LACTUCA *Tourn. Inſt. R. H.* 473. *Tab.* 267. *Lin. Gen. Pl.* 814. Lettuce; in *French*, *Laitue*.

The *Characters* are,

The Flowers are compoſed of ſeveral hermaphrodite Florets, incloſed in one ſcaly oblong Empalement; theſe lie over each other like the Scales of Fiſh. The Florets have 1 *Petal, ſtretched out on one Side like a Tongue, and ſlightly indented at the End in* 3 *or* 4 *Parts; theſe have* 5 *ſhort hairy Stamina, ſupporting a ſlender Style, crowned by* 2 *reflexed Stigmas. The Germen becomes* 1 *oblong pointed Seed, crowned with a ſingle Down, ſitting in the ſcaly Empalement.*

It would be beſide my Purpoſe to mention in this Place the ſeveral Sorts of Lettuce to be found in Botanick Writers, many of which are Plants of no Uſe; and never cultivated but in Botanick Gardens for Variety, and ſome of them are found wild in many Parts of *England*. I ſhall therefore paſs over thoſe, and only mention here the ſeveral Sorts cultivated in the Kitchen Garden for Uſe: 1. Common, or Garden Lettuce. 2. Cabbage Lettuce. 3. *Cilicia* Lettuce. 4. *Dutch* Brown Lettuce. 5. *Aleppo* Lettuce. 6. Imperial Lettuce. 7. Green Capuchin Lettuce. 8. *Verſailles*, or Upright White Cos Lettuce. 9. Black Cos. 10. White Cos. 11. Red Capuchin Lettuce. 12. *Roman* Lettuce. 13. Prince Lettuce. 14. Royal Lettuce. 15. *Egyptian* Cos Lettuce.

The firſt of theſe Sorts is commonly ſown for cutting very young, to mix with other ſmall Sallad Herbs, and is only different from the ſecond Sort, in being a Degeneracy therefrom, or otherwiſe the ſecond is an Improvement by frequent Cultivation from the firſt; for if the Seeds are ſaved from ſuch Plants of the ſecond Sort as did not Cabbage cloſely, the Plants produced from that Seed will all degenerate to the firſt Sort, which is by the Gardeners called Lapped Lettuce, to diſtinguiſh it from the other, which they call Cabbage Lettuce. The Seeds of the firſt, which are commonly ſaved from any of the Plants, without Regard to their Goodneſs, are generally ſold at a very cheap Rate (eſpecially in dry Seaſons, when theſe Plants always produce the greateſt Quantity of Seeds,) though ſometimes this Seed is ſold in the Seed Shops, and by Perſons who make a Trade of ſelling Seeds, for the Cabbage Lettuce, which is often the Occaſion of Peoples being diſappointed in their Crop; ſo that this Sort ſhould never be cultivated but to be cut up very young, for which Purpoſe this is the only good Sort, and may be ſown any Time of the Year, obſerving only in hot Weather to ſow it on ſhady Borders, and in the Spring and Autumn upon warm Borders, but in Winter it ſhould be ſown under Glaſſes, otherwiſe it is ſubject to be deſtroyed by ſevere Froſts.

The Cabbage Lettuce may alſo be ſown at different Times of the Year, in order to have a Continuation of it through the whole Seaſon. The firſt Crop is generally ſown in *February*, which ſhould be on an open warm Spot of Ground, and when the Plants are come up, they ſhould be thinned out to the Diſtance of 10 Inches each Way, which may be done by hoeing them out, as is practiſed for Turneps, Carrots, Onions, *&c.* provided you have no Occaſion for the ſuperfluous Plants, otherwiſe they may be drawn up, and tranſplanted into another Spot of good Ground at the ſame Diſtance, which, if done before the Plants are too large, they will ſucceed very well, though they will not be ſo large as thoſe which were left upon the Spot where they were ſown, but they will come ſomewhat later, which will be of Service where People do not continue ſowing every Fortnight.

You muſt alſo obſerve in ſowing the ſucceeding Crops, as the Seaſon advances, to chooſe a ſhady moiſt Situation, but not under the Drip of Trees, otherwiſe, in the Heat of Summer they will run up to Seed before they cabbage. In the Beginning of *Auguſt* you ſhould ſow the laſt Crop, which is to ſtand over Winter; the Seeds ſhould be ſown thin upon a good light Soil, in a warm Situation; and when the Plants are come up, they muſt be hoed out, ſo as to ſtand ſingly, and cut down all the Weeds to clear them. In the Beginning of *October* they ſhould be tranſplanted into warm Borders, where, if the Winter be not very ſevere, they will ſtand very well; but in order to be ſure of a Crop, it will be adviſable to plant a few on a Bed pretty cloſe, where they may be arched over with Hoops, and in ſevere Froſts they ſhould be covered with Mats and Straw, or Peas Haulm, to ſecure them from being deſtroyed; and in the Spring of the Year they may be tranſplanted out into a warm rich Soil, at the Diſtance before-mentioned, but ſtill thoſe which grew under the Wall, if they eſcaped the Winter, and were ſuffered to remain, will cabbage ſooner than thoſe which are removed; but you muſt obſerve not to place them too cloſe to the Wall, which would occaſion their growing up tall, and prevent their being large or hard.

In order to ſave good Seeds of this Kind, you ſhould look over your Lettuces when they are in Perfection, and ſuch of them as are very hard, and grow low, ſhould have Sticks thruſt into the Ground, by the Sides of as many of them, to mark them from the reſt; and you ſhould carefully pull up all the reſt from among them as ſoon as they begin to run up, if any happen to be left, leſt when they are run up to Flower, they ſhould, by intermixing with the good ones, degenerate the Seeds.

It may be ſome Perſons may object, that if ſome bad ones ſhould happen to be left among them (for Seeds to ſow for ſmall Sallads,) yet the good ones being marked, the Seeds need not be mixed, and ſo no Danger can enſue from thence; but notwithſtanding ever ſo much Care be taken to keep the Seeds ſeparate, yet, whether from the intermixing of the Farina during the Time of their being in flower, or what other Cauſe, I cannot ſay, but it hath been obſerved, that where good and bad Plants have ſeeded upon the ſame Spot, the Seeds of the good Plants, which were carefully ſaved ſeparately, have very much degenerated, and proved worſe than ſuch as have ſeeded by themſelves. The Seeds ſhould always be ſaved either from thoſe which ſtood through the Winter, or thoſe which were ſown early in the Spring, for the late ones very ſeldom perfect their Seeds.

The *Cilicia*, Imperial, Royal, Black, White, and Upright Cos Lettuces may be ſown at the following Times;

the firſt Seaſon for ſowing theſe Seeds is at the latter End of *February*, or the Beginning of *March*, upon a warm light Soil, and an open Situation, *i. e.* not overſhadowed with Trees; and when the Plants are come up, they ſhould be either hoed out, or tranſplanted into another Spot of Ground (as was directed for the Cabbage Lettuce,) obſerving to leave theſe Sorts 15 or 16 Inches apart each Way, which will be full near enough for theſe Plants, eſpecially if the Soil be good, and you muſt carefully keep them clear from Weeds, which is the only Culture they will require, except the Black Cos Lettuce, which ſhould be tied up when they are full grown (in the Manner directed for blanching Endive,) to whiten their inner Leaves, and render them criſp, otherwiſe they are ſeldom good for much, rarely cabbaging without this Aſſiſtance.

When your Lettuces are in Perfection, you ſhould look over them, and mark as many of the beſt of them as you intend for Seed (in the Manner directed for the common Cabbage Lettuce,) being very careful not to ſuffer any ordinary ones to ſeed among them, as was before obſerved, which would prove more injurious to theſe Sorts than to the common, as being more inclinable to degenerate with us, if they are not carefully preſerved.

You may alſo continue theſe Sorts through the Seaſon, by ſowing them in *April*, *May*, and *June*, obſerving (as was before directed) to ſow the late Crops in a ſhady Situation, otherwiſe they will run up to Seed before they grow to any Size, but in the Middle of *September* you may ſow of theſe Sorts, to abide the Winter, which Plants ſhould be tranſplanted either under Glaſſes, or into a Bed, which ſhould be arched over with Hoops, in order to be covered in Winter, otherwiſe in hard Winters they are often deſtroyed, but you muſt conſtantly let theſe Plants have as much free Air as poſſible, when the Weather is mild, only covering them in hard Rains, or froſty Weather, for if they are kept too cloſely covered in Winter, they will be ſubject to a Mouldineſs, which ſoon rots them.

In the Spring theſe Plants ſhould be planted out into a rich light Soil, allowing them at leaſt 18 Inches Diſtance each Way, for if they are planted too cloſe, they are very ſubject to grow tall, but ſeldom cabbage well; and from this Crop, if they ſucceed well, it will be proper to ſave your Seeds; though you ſhould alſo ſave from that Crop ſown in the Spring, becauſe ſometimes it happens, that the firſt may fail by a wet Seaſon, when the Plants are full in flower, and the ſecond Crop may ſucceed, by having a more favourable Seaſon afterward; and if they ſhould both ſucceed, there will be no Harm in that, ſince the Seeds will grow very well when 2 Years old, and if well ſaved, at 3, but this will not always happen.

The moſt valuable of all the Sorts of Lettuce in *England*, are the *Egyptian* Green Cos, and the *Verſailles*, or White Cos, the *Cilicia*, and Black Cos, though ſome People are very fond of the Royal and Imperial Lettuces, but they ſeldom ſell ſo well in the *London* Markets as the other, nor are ſo generally eſteemed. Indeed of late Years, ſince the White Cos has been commonly cultivated, it has obtained the Preference of all the other Sorts, until the *Egyptian* Green Cos was introduced, which is ſo much ſweeter and tenderer than the White Cos, that it is by all good Judges eſteemed the beſt Sort of Lettuce yet known. This Sort will endure the Cold of our ordinary Winters full as well as the White Cos; but at the Seaſon of its Cabbaging, if there happens to be much Wet, this being very tender, is very ſubject to rot.

The Brown *Dutch* and Green Capuchin Lettuces, are very hardy, and may be ſown at the Seaſons directed for the common Cabbage Lettuce, and are very proper to plant under a Wall, or Hedge, to ſtand the Winter, where many Times theſe will abide, when moſt of the other Sorts are deſtroyed, and therefore they will prove very acceptable, at a Time when few other Sorts are to be had; they will alſo endure more Heat and Drought than moſt other Sorts of Lettuce, which renders them very proper for late ſowing, for it often happens, in very hot Weather, that the other Sorts of Lettuce will run up to Seed in a few Days after they are cabbaged, whereas theſe will abide near 3 Weeks in good Order, eſpecially if Care be taken to cut the forwardeſt firſt, leaving thoſe that are not ſo hard cabbaged to be laſt. In ſaving theſe Seeds, the ſame Care ſhould be taken to preſerve only ſuch as are very large, and well cabbaged, otherwiſe the Seeds will degenerate, and be good for little.

The Red Capuchin, *Roman*, and Prince Lettuces are pretty Varieties, and Cabbage very early, for which Reaſon a few of them may be preſerved, as may alſo ſome of the *Aleppo*, for the beauty of its ſpotted Leaves, though very few People care for either of theſe Sorts at Table, when the other more valuable ones are to be obtained; but in a Scarcity, theſe may ſupply the Place pretty well, and theſe Sorts are very proper for Soups. The Seeds of theſe muſt alſo be ſaved from ſuch as cabbage beſt, othrewiſe they will degenerate, and be good for little.

In ſaving Seeds of all theſe Sorts of Lettuce, you ſhould obſerve, never to let two Sorts ſtand near each other, for by their Farina mixing, they will both vary from their Original, and partake of each other, and there ſhould be a Stake fixed down by the Side of each, to which the Stem ſhould be faſtened, to prevent their being broken, or blown out of the Ground by Wind, to which the *Cilicia* Cos, and the other large growing Lettuces, are very ſubject when in flower. You muſt alſo obſerve to cut ſuch Branches of the large growing Lettuces as ripen firſt, and not wait to have the Seed of the whole Plant ripe together, which never happens: but, on the contrary, ſome Branches will be ripe a Fortnight or three Weeks before others, and when you cut them, they muſt be ſpread upon a coarſe Cloth in a dry Place, that the Seeds may dry, after which you ſhould beat them out, and dry them again, and then preſerve them for Uſe, being careful to hang them up where Mice and other Vermin, cannot come at them, for if they do, they will ſoon eat them up.

LACTUCA AGNINI. *See* Valerianella.

LADY's SLIPPER. *See* Cypripedum.

LADY's SMOCK. *See* Cardamine.

LAGŒCIA, Baſtard Cumin.

The *Characters* are,

It hath many Flowers collected into a Head, which have 1 *common Empalement, compoſed of* 8 *indented Leaves,* *but the ſimple Empalement to each Flower hath 4 Leaves, very narrow and pennated. The Flower conſiſts of 5 horned Petals, ſhorter than the Empalement; at the Bottom of each Flower is ſituated the Pointal, attended by 5 Stamina, which are long and narrow; the Pointal afterward changes to an oval Seed, crowned with the Empalement.*

There is but one *Species* of this Plant, *viz.*

LAGOECIA. *Lin. Hort. Cliff.* Baſtard, or Wild Cumin. We have no other *Engliſh* Name for this Plant, nor is this a very proper one, but as it has been titled by ſome of the antient Botaniſts *Cuminum ſylveſtre*, i. e. Wild Cumin, and by Dr. *Tournefort* it is made a diſtinct Genus, by the title of *Cuminoides*, it may be ſtyled Wild, or Baſtard Cumin.

This is an annual Plant, which grows about a Foot high. The Leaves reſemble thoſe of the Honeywort. The Flowers, which are of a greeniſh yellow Colour, are collected in ſpherical Heads at the Extremity of the Shoots; but there being little Beauty in the Plant, it is rarely cultivated, except in Botanick Gardens. It grows plentifully about *Aix*, in *Provence*, as alſo in moſt of the Iſlands of the *Archipelago*. It is annual, and periſhes ſoon after the Seeds are ripe. The Seeds of this Plant ſhould be ſown in Autumn, ſoon after they are ripe, or if they are permitted to ſcatter, the Plants will come up, and require no other Care but to clear them from Weeds. When the Seeds are ſown in the Spring, they commonly remain in the Ground a Year before they grow, and ſometimes I have known them lie 2 or 3 Years in the Ground, ſo that if the Plants do not come up the firſt Year, they ſhould not be diſturbed.

LAGOPUS. *See* Trifolium.

LAMINATED, ſignifies plated. Thoſe Things are ſaid to be laminated, whoſe Contexture diſcovers ſuch a Diſpoſition as that of Plates lying over one another.

LAMIUM. *Tourn. Inſt. R. H.* 183. *Tab.* 89. *Lin. Gen. Pl.* 636. Dead Nettle, or Archangel.

The *Characters* are,

The Flower hath a permanent Empalement of 1 *Leaf, which is tubulous, and cut into* 5 *equal Segments at the Top, which end in Beards. The Flower is of the Lip Kind, it hath* 1 *Petal, with a ſhort cylindrical Tube, ſwollen at the Chaps and compreſſed; the upper Lip is arched, roundiſh, obtuſe, and entire; the under is ſhort, Heart-ſhaped, reflexed, and indented at the End. It hath* 4 *Awl-ſhaped Stamina joined to the upper Lip,* 2 *of which are longer than the other, terminated by oblong hairy Summits. It hath a four cornered Germen, ſupporting a ſlender Style ſituated with the Stamina, and crowned by an acute two pointed Stigma; the Germen becomes* 4 *three cornered Seeds, ſitting in the open Empalement.*

The *Species* are,

1. LAMIUM *foliis cordatis obtuſis petiolatis. Hort. Cliff.* 314. Dead Nettle with Heart-ſhaped obtuſe Leaves ſtanding on Foot Stalks. *Lamium purpureum fœtidum, folio ſubrotundo, ſive Galeopſis Dioſcoridis. C. B. P.* Purple ſtinking Archangel, or Dead Nettle, or the *Galeopſis* of *Dioſcorides* with a roundiſh Leaf.

2. LAMIUM *foliis cordatis acuminatis ſerratis petiolatis. Hort. Cliff.* 314. Dead Nettle with pointed Heart-ſhaped Leaves which are ſawed, and have Foot Stalks. *Lamium album, non fœtens, folio oblongo. C. B. P.* White Archangel or Dead Nettle, which does not ſtink, with an oblong Leaf.

3. LAMIUM *foliis cordatis crenatis villoſis, labio floris ſuperiore crenato.* Dead Nettle with Heart-ſhaped crenated Leaves which are hairy, and the upper Lip of the Flower crenated. *Lamium garganicum ſubincanum, flore purpuraſcente, cum labio ſuperiore crenato. Micheli.* Hoary Dead Nettle with a purpliſh Flower, whoſe upper Lip is crenated.

4. LAMIUM *foliis cordatis obtuſis glabris, floralibus ſeſſilibus, calycibus profunde inſicis.* Dead Nettle with Heart-ſhaped obtuſe ſmooth Leaves, the upper ſitting cloſe to the Stalks, and the Empalements deeply cut. *Lamium Orientale, nunc moſchatum, nunc fœtidum, magno flore. Tourn. Cor.* Eaſtern Dead Nettle, ſometimes ſweet ſcented, and ſometimes ſtinking, with a large Flower.

5. LAMIUM *foliis cordatis nervoſis ſerratis, petiolis longioribus, caule erecto.* Dead Nettle with Heart-ſhaped veined Leaves ſawed, and longer Foot Stalks with an erect Stalk. *Lamium montanum meliſſæ folio. C. B. P.* 231. *Icon. Pl.* 158. Mountain Dead Nettle with a Balm Leaf.

There are ſeveral other Species of this Genus, as alſo ſome Varieties of it, but as they are many of them Weeds, I have paſſed them over, for there are few who care to admit them into their Gardens.

The 1ſt Sort grows naturally in moſt Parts of *England*, under Hedges and by the Side of Highways; it is alſo a troubleſome Weed in Gardens, but as it ſtands in moſt of the Diſpenſaries as a medicinal Plant, I have choſen to inſert it. This is an annual Plant, whoſe Stalks ſeldom riſe more than 4 or 5 Inches high; the under Leaves are Heart-ſhaped, blunt, and ſtand on pretty long Foot Stalks, but the upper Leaves ſit nearer to the Stalks; the Flowers come out in Whorls on the upper Part of the Stalk; they are of a pale purple Colour, and are ſucceeded by 4 naked Seeds ſitting in the Empalement; after the Seeds are ripe the Plant decays. It flowers from the Middle of *March*, when the autumnal ſelf-ſown Plants appear; theſe are ſucceeded by others, which continue in Succeſſion all the Summer.

The 2d Sort is commonly called Archangel; this is alſo uſed in Medicine, for which Reaſon I have enumerated it here. The Roots of this Sort are perennial and creep much in the Ground, ſo is difficult to extirpate, where it happens to grow under Buſhes and Hedges, for the Roots intermix with thoſe of the Buſhes, and every ſmall Piece of them will grow and ſpread. The Stalks of this riſe much higher than thoſe of the laſt, the Flowers are larger, white, and grow in Whorls round the Stalks; theſe continue in Succeſſion moſt Part of Summer.

The 3d Sort grows naturally upon the Mountains in *Italy*; this hath a perennial creeping Root, from which ariſe many thick ſquare Stalks a Foot high, garniſhed with Heart-ſhaped Leaves which are hairy, placed by Pairs oppoſite, ſtanding on pretty long Foot Stalks; the Flowers come out in Whorls at the Joints of the Stalk, they are large, and of a pale purpliſh Colour; theſe continue in Succeſſion moſt Part of the Summer, and the Flowers are ſucceeded by Seeds, which ripen about 6 Weeks after. This may be propagated by

Seeds, but as the Roots ſpread greatly in the Ground, when once it is obtained, it will propagate faſt enough without Culture.

The 4th Sort grows naturally in the *Archipelago*; this is an annual Plant, which, if permitted to ſcatter its Seeds, will come up in the Autumn, and thrive better than when ſown by Hand. The Plants come up in Autumn, and during the Winter their Leaves make a pretty Appearance, for they are marked with white ſomewhat like thoſe of the autumnal Cyclamen; the Stalks riſe 8 or 9 Inches high, they are garniſhed with ſmooth Heart-ſhaped Leaves placed oppoſite; theſe in dry Weather have a muſky Scent, but in wet Weather are fetid; the Flowers are white, ſtanding in Whorls round the Stalks. They appear in *April*, and the Seeds ripen in *June*, then the Plants decay; this requires no Culture, but to keep the Plants clear from Weeds.

The 5th Sort grows naturally in *Portugal*; this hath a perennial Root and an annual Stalk, which riſes a Foot and a Half high; it is ſtrong, ſquare, and grows erect; the Leaves are large, Heart-ſhaped, and much veined; they are deeply ſawed on their Edges, and placed by Pairs oppoſite. The Flowers come out in Whorls round the Stalks at every Joint, they are very large and of a deep purple Colour; thoſe on the lower Part of the Stalks appear the Beginning of *May*, which are ſucceeded by others above, ſo that there is a Continuance of Flowers almoſt two Months on the ſame Stalks. This Plant very rarely produces good Seeds in *England*, nor do the Roots propagate very faſt, ſo that it is not common here.

The beſt Time to remove and part theſe Roots is in *October*, but they muſt not be tranſplanted oftener than every third Year, if they are required to flower ſtrongly, for the great Beauty of this Plant conſiſts in the Number of Stalks, which are always proportional to the Size of the Plants; for ſmall Plants will put out one or two Stalks only, whereas the large ones will have 8 or 10. The Roots are hardy, and will thrive beſt in a ſoft loamy Soil.

LAMPSANA. *See* Lapſana.

LAND. Its Improvement.

1. By *Incloſing*.

Incloſing Lands, and dividing the ſame into ſeveral Fields, for Paſture or Tillage, is one of the principal Ways of Improvement; firſt, by aſcertaining to every Man his juſt Property, and thereby preventing an Infinity of Treſpaſſes and Injuries, that Lands in common are ſubject unto, beſide the Diſadvantage of being obliged to keep the ſame Seaſons with the other People who have Land in the ſame Field; ſo that the ſowing, fallowing, and tilling the Ground, muſt be equally performed by all the Landholders; and when there happens a ſlothful negligent Perſon, who has Land intermixed with others, it is one of the greateſt Nuiſances imaginable. Secondly, it being of itſelf a very great Improvement; for where Land is properly incloſed, and the Hedge Rows planted with Timber Trees, *&c.* it preſerves the Land warm, and defends and ſhelters it from the violent cold nipping Winds, which, in ſevere Winters, deſtroy much of the Corn, Pulſe, or whatever grows on the open Field or champain Grounds. And where it is laid down for Paſture, it yields much more Graſs than the open Fields, and the Graſs will begin to grow much ſooner in the Spring. The Hedges and Trees alſo afford Shelter for the Cattle from the cold Winds in Winter as alſo Shade for them in the great Heats of Summer. And theſe Hedges afford the diligent Huſbandman Plenty of Fuel, as alſo Ploughboot, Cart-boot, *&c.* And where they are carefully planted and preſerved, furniſh him with Timber and Maſt for his Swine; or where the Hedge Rows are planted with Fruit Trees, there will be a Supply of Fruit for Cyder, Perry, *&c.* which in moſt Parts of *England* are of no ſmall Advantage to the Huſbandman.

By this Method of incloſing, there is alſo much more Employment for the Poor, and is therefore a good Remedy againſt Beggary; for in thoſe open Countries, where there are great Downs, Common, Heaths, and Waſtes, there is nothing but Poverty and Idleneſs to be ſeen amongſt the Generality of their Inhabitants. It is very obſervable of late Years, how advantageous the incloſing the Land in *Worceſterſhire*, and ſome other Countries at a Diſtance from *London*, has been to the Inhabitants; for before this Method was introduced among them, the Lands for the moſt Part lay in Commons, *&c.* on which the poorer Sort of People built themſelves Cottages with Mud Walls, where they contented themſelves with a Cow or two, and ſome Swine; and thoſe of them who were more induſtrious than the reſt, travelled to the Neighbourhood of *London* every Spring, where they were employed in the Gardens and Fields for the Summer Seaſon; and in Autumn they returned to their native Countries, where they lived in Winter, on what Money they had ſaved in Summer. But ſince they have converted their Waſtes and Commons into Incloſures, there are but few of the Inhabitants of thoſe Countries, who come to *London* for Work, in Compariſon to the Numbers that formerly came; ſo that moſt of the Labourers, who come to *London* for Employment, are either *Welch*, or Inhabitants of ſome diſtant Counties, where this Improvement hath not as yet been introduced.

The Advantages of incloſing Land are now ſo generally known, that there is no Occaſion for me to enumerate them here; ſince the Improvements which have been made of late Years in ſeveral Parts of *England*, and the Increaſe of Rent that is every where made by thoſe who incloſe, are ſufficient Arguments to enforce the Practice, and render it general; more eſpecially in the North, where it is moſt neglected, becauſe it would greatly ſhelter the Lands, and render them much warmer than they now are.

In incloſing Land, Regard ſhould be had to the Nature of the Soil, and what it is intended for, becauſe Corn Land ſhould not be divided into ſmall Parcels; for beſides the Loſs of Ground in Hedges, *&c.* the Corn doth ſeldom thrive ſo well in ſmall Incloſures, as in more open Fields, eſpecially where the Trees are large in the Hedge Rows. The Graſs alſo in Paſtures is not ſo ſweet near Hedges, or under the Drip of Trees, as in an open Expoſure; ſo that where the Incloſures are made too ſmall, or the Land over-planted with Trees, the Herbage will not be near ſo good, nor in ſo great Plenty, as in larger Fields; therefore, before a Perſon begins to incloſe, he ſhould well conſider how he may do it to the greateſt Advantage; as for Inſtance, It is always neceſſary to have ſome ſmaller Incloſures near the Habitation, for the Shelter of Cattle, and the Conveniency of ſhifting them from one Field to another, as the Seaſon of the Year may require; and hereby the Habitation, Barns, Stables, and Out-houſes, will be better defended from ſtrong Winds, which often do great Damage to thoſe that are expoſed to their Fury. Theſe ſmall Incloſures may be of ſeveral Dimenſions, ſome of them 3, 4, 6, or 8 Acres in Extent; but the larger Diviſions for Corn ſhould not contain leſs than 20 or 30 Acres or more, according to the Size of the Farm.

The uſual Method of incloſing Land is, with a Ditch and Bank ſet with Quick. But in Marſh Land, where there is plenty of Water, they content themſelves with only a Ditch, by the Sides of which they uſually plant Sallows or Poplars, which being quick of Growth, in a few Years afford Shade to the Cattle; and when they are lopped, produce a conſiderable Profit to their Owners. In ſome Countries the Diviſion of their Lands is by dry Walls made of flat Stones, laid regularly one upon another, and laying the Top Courſe of Stones in Clay, to keep them together, the Weight of which ſecures the under ones. But in ſome Parts of *Suſſex* and *Hampſhire* they often lay the Foundation of their Banks with flat Stones, which is of a conſiderable Breadth at Bottom; upon which they raiſe the Bank of Earth, and plant the Hedge on the Top, which in a few Years makes a ſtrong durable Fence, eſpecially if they are planted with Holly, as ſome of thoſe in *Suſſex* are.

In Marſhes and open Paſtures, where there are no Hedges, the Ditches are generally made 6 Feet wide at the Top, eſpecially thoſe which are on the Side of Highways or Commons; but the common Ditches about Incloſures are ſeldom more than 3 Feet and a Half wide at Top, and 1 and a Half at Bottom, and 2 Feet deep; that the Sides may have a good Slope, and not be too upright, as they are frequently made about *London*, ſo that they are continually waſhing down with great Rains. In theſe narrow bottomed Ditches the Cattle cannot ſtand to turn themſelves, ſo as to crop the Quick; but where the Ditches are made wider, they ſhould be proportionally deeper: As for Inſtance, If the Ditch is made 5 Feet broad, it muſt be 3 deep; and if 6 Feet broad, 3 and a Half deep, and ſo in Proportion.

The Method of incloſing Lands, by raiſing high Banks of Earth, on the Side of which the Quick is planted (as is too much practiſed in many Places near *London*) is intolerable, for it is not only unſightly, but very expenſive; becauſe theſe Banks are continually waſhing down, ſo that they muſt be repaired every Year at leaſt, if not oftener, otherwiſe the Earth will be in a few Years waſhed from the Roots of the Quick, and for Want of proper Nouriſhment, the Hedge will ſoon decay, which is the Caſe with the greateſt Number of the Hedges about *London*: Beſides, it is a very uncertain Way of planting Quick on the Side of a ſteep Bank, where all the Moiſture runs off; ſo that if the Spring ſhould prove dry after it is planted, there is a great Hazard whether half the Plants will grow, and thoſe that take ſeldom make much Progreſs; whereas thoſe planted on the plain Surface, where they enjoy the Advantages of Sun and Moiſture, will in 4 Years make a better Fence, than one of thoſe Bank Hedges will in 8 Years, and will continue good much longer. Therefore I adviſe, that the Banks on which the Hedges are to be planted, ſhould not be raiſed more than one Foot above the Surface of the Ground, where the Land is dry, and in wet Land not more than two Feet, which will be enough.

I ſhall now mention the moſt proper Plants for making Fences for the different Soils and Situations, ſo as to anſwer the Expectation of the Planter: And firſt, the white Thorn is eſteemed the beſt for Fencing, and will grow upon almoſt any Soil and in any Situation, but it ſucceeds beſt on a Hazle Loam. Of this there are 3 or 4 Varieties, which differ in the Breadth of their Leaves and the Size of their Haws, but that Sort with the ſmalleſt Leaves and Haws will make the cloſeſt Fence. For it is very certain, that the Branches of all Sorts of Trees are produced at a Diſtance, in Proportion to the Size of their Leaves; ſo that Yews, and other ever-green Trees with ſmall Leaves, will always make a cloſer Hedge than other Trees whoſe Leaves are larger. Therefore, for the cloſeſt Hedge, the ſmalleſt Haws ſhould be choſen; but where the moſt vigorous Shooters are required, for the Advantage of lopping, there the largeſt Haws ſhould be preferred. But as theſe Hedges are uſually planted from a Nurſery, where the Haws are promiſcuouſly ſown, it is very common to ſee two or three Sorts planted in the ſame Hedge; which may be eaſily diſtinguiſhed, when they have obtained Strength, by the Difference of their Growth. Indeed, where a Perſon is curious in raiſing his own Quick, it is worth while to gather the Haws ſeparately and ſow them apart; and each Sort ſhould be planted in a ſeparate Hedge, which will render the Hedges more equal in their Growth. If theſe Haws are ſown in the Places where they are deſigned to remain for a Fence, they will make a much greater Progreſs in a few Years, than thoſe which are tranſpanted; but as the Seeds remain a whole Year in the Ground before the Plants appear, few People care to practiſe this Method.

The next to the white Thorn is the black Thorn, which, though not ſo generally eſteemed as the white, yet will make an excellent Fence, where proper Care is taken in the planting, and after Management of it; and the Loppings of this Hedge make much the beſt Buſhes, and are of longer Duration for dead Hedges, than any other Sort, and are very proper to mend Gaps in Fences; for their Branches being beſet with ſharp Thorns, the Cattle are not ſo apt to crop them as the white Thorn, and ſome other Sorts. Theſe Hedges are alſo better, if the Stones are ſown on the Spot where they are to remain, than where the Plants are taken from a Nurſery.

The Crab will alſo make a ſtrong durable Fence, this may be raiſed by ſowing the Kernels in the Place where the Hedge is deſigned; but then there ſhould be great Care taken of the Plants while they are young, to keep them clear of Weeds, as alſo to guard them from Cattle. When theſe Stocks have obtained Strength, ſome of them may be grafted with Apples for Cyder, where the Fence is not expoſed to a publick Road; but theſe Grafts ſhould not be nearer than 35 or 40 Feet, leſt they ſpoil the Hedge, by their Heads overgrowing and dripping on it.

The Holly is alſo an excellent Plant for ever-green Hedges, and would claim the Preference to either of the former, were it not for the Slowneſs of its Growth while young, and the Difficulty of tranſplanting the Plants when grown to a moderate Size. This will grow beſt in cold ſtony Lands, where, if once it takes well, the Hedges may be rendered ſo cloſe and thick, as to keep out all Sorts of Animals, and will grow to a great Height, and is of long Duration. Theſe Hedges may be raiſed, by ſowing the Berries in the Place where they are deſigned to remain; but as they continue in the Ground an entire Year before the Plants appear, few Perſons care to wait ſo long; therefore the uſual Method is, to plant the Hedges with Plants of 3 or 4 Years Growth. But where this is practiſed, they ſhould not be tranſplanted till toward the End of *March*; and the Surface of the Ground ſhould be covered with Mulch near their Roots after they are planted, to keep the Earth moiſt; and if the Seaſon ſhould prove dry, the Plants ſhould be watered at leaſt once a Week, until they have taken Root, otherwiſe they will be in Danger of miſcarrying.

The Alder will alſo make a good Hedge, when planted on a moiſt Soil, or on the Side of Rivers, or large Ditches; and will preſerve the Bank from being waſhed away, where there are running Streams; for they ſpread pretty much at Bottom, and ſend forth Suckers from their Roots in great Plenty; but theſe Hedges ſhould be ſheared at leaſt once a Year, in order to make them thick. Theſe Alder Hedges are very ornamental, when they are well kept in large Gardens; and as they will thrive beſt on wet ſwampy Lands, where many other Plants will not live, they ſhould be ſelected for ſuch Situations.

Of late Years the Furz has been much propagated for Hedges in ſeveral Parts of *England*, and indeed will make a good Fence on poor, ſandy, or gravelly Soils, where few other Plants will grow. The beſt Method of raiſing theſe Hedges is, to ſow the Seed about the latter End of *March*, or Beginning of *April*, in the Place where the Hedge is deſigned; for the Plants will not bear to be tranſplanted, unleſs it be done while they are young, and then there is great Hazard of their taking. The Ground where the Seeds are to be ſown ſhould be well cleanſed of Weeds, and the Surface made light; then there ſhould be two or three Drills made (according to the Width which the Hedge is intended) about half an Inch deep, into which the Seeds ſhould be ſcattered pretty thick; and then the Drills ſhould be filled up with the Head of a Rake, to cover the Seeds. This Work ſhould be performed in dry Weather, for if much Wet falls ſoon after the Seeds are ſown, it is apt to burſt them. When the Plants are come up, they ſhould be kept clear from Weeds, that they may ſpread and grow thick at Bottom; and if theſe Hedges are ſecured from Cattle browſing on them, and are cut every Spring juſt before they begin to ſhoot, they will make an exceeding cloſe Fence; but where they are deſigned to be cut for Fuel, then the beſt Way is to let them ſpread in Width; and when they are 2 Years old, to cut them down in the Spring, juſt before they begin to ſhoot, within 2 or 3 Inches of the Ground, which will cauſe them to ſend forth a Number of Shoots from each Root, and thereby increaſe the Width of the Hedge; and by ſo doing, the Plants will not run up tall and weak, and be in Danger of being weighed down by great Falls of Snow. Theſe Hedges when they are well grown, may be cut down every 3d or 4th Year for Fuel; wherefore if there is a treble Row of Furz ſown, at about 3 Feet apart, they may be cut down alternately, ſo that there will be a Fence always remaining. But this is only recommended for ſuch ſandy Lands as let for a ſmall Rent, and where Fuel is ſcarce. The beſt Sort of Furz for this Purpoſe is the greater Kind, commonly called the *French* Furz, which will grow to a great Height, and doth not ſpread ſo much as the ordinary ſmall Sort.

Elder is ſometimes planted for Hedges, being very quick of Growth; ſo that if Sticks or Truncheons about 4 or 5 Feet long be thruſt into a Bank Slopewiſe each Way, ſo as to croſs each other, and thereby form a Sort of Chequer Work, it will make a Fence for Shelter in one Year. But as this is a vigorous growing Plant, it will never form a cloſe Fence; and the young Shoots being very ſoft and pithy, are ſoon broken by Cattle, or Boys in their Sport. Beſides, where they are ſuffered to bear Berries, and theſe are ſcattered over the neighbouring Land, they will come up the following Spring, and become very troubleſome. Where theſe Hedges are planted, they may be cut down every third Year near the Ground; and theſe Stakes (when diveſted of their Bark, ſo as to prevent their growing) will laſt longer in the Ground, to ſupport Vines or any other Plants, which do not require tall Stakes, than any other Sort of Tree yet known. And where the Trees are ſuffered to grow to any conſiderable Size, the Wood is as hard as Box, and therefore very uſeful for Turners and Inſtrument Makers. The beſt Seaſon for planting theſe Truncheons is ſoon after *Michaelmas*, becauſe theſe Plants ſhoot very early in the Spring. Of late Years there have been many Hedges, and other Plantations, made of the white berried Elder, for the Sake of their Fruit to make Wine; which, if rightly made, hath the Flavour of *Frontiniack* Wine, and is by ſome Perſons vended for it.

There are ſome other Plants which have been recommended for Fences, but thoſe here enumerated are the only uſeful Sorts for ſuch Purpoſes; wherefore I ſhall paſs over the others, as not worthy the Care of the Huſbandman. And as to the farther Directions for planting and preſerving Hedges, with Inſtructions for plaſhing or laying them, the Reader is deſired to turn to the Articles *Fences* and *Hedges*, where there are particular Directions for theſe Works exhibited.

The draining Land is alſo another great Improvement to it; for though Meadows and Paſtures, which are capable of being overflowed, produce a greater Quantity of Herbage than dry Land; yet where the Wet lies too long on the Ground, the Graſs will be ſour and extremely coarſe; and where there is not Care taken in Time to drain this Land, it will produce little Graſs, and ſoon be overrun with Ruſhes and Flags, ſo as to be of ſmall Value. The Land moſt liable to this, is cold ſtiff Clays where the Water cannot penetrate, but is contained as in a Diſh; ſo that the Wet which it receives in Winter, continues till the Heat of the Sun exhales the greateſt Part of it.

The beſt Method for draining theſe Lands is, to cut ſeveral Drains acroſs the Land, in thoſe Places where the Water is ſubject to lodge; and from theſe croſs Drains to make a convenient Number of other Drains, to carry off the Water to either Ponds or Rivers in the lower Parts of the Land. Theſe Drains need not be made very large, unleſs the Ground be very low, and ſo ſituated as not to be near any River to which the Water may be conveyed; in which Caſe there ſhould be large Ditches dug at proper Diſtances, in the loweſt Part of the Ground, to contain the Water; and the Earth which comes out of the Ditches ſhould be equally ſpread on the Land, to raiſe the Surface. But where the Water can be conveniently carried off, the beſt Method is, to make under Ground Drains at proper Diſtances, which may empty themſelves into large Ditches, which are deſigned to carry off the Water. Theſe Sort of Drains are the moſt convenient, and as they are hid from the Sight, do not incommode the Land, nor is there any Ground loſt where theſe are made.

The uſual Method of making theſe Drains, is to dig Trenches, and fill the Bottoms with Stones, Bricks, Ruſhes, or Buſhes, which are covered over with the Earth, which was dug out of the Trenches; but this is not the beſt Method, becauſe the Water has not a free Paſſage through the Drains, ſo that whenever there is a Flood, theſe Drains are often ſtopped by the Soil which the Water frequently brings down with it. The beſt Method I have yet obſerved to make theſe Drains, is, to dig Trenches to a proper Depth for carrying off the Water, which for the principal Drains ſhould be 3 Feet wide at their Top, and ſloped down for 2 Feet in Depth, where there ſhould be a ſmall Bank left on each Side, upon which the croſs Stakes or Bearers ſhould be laid, and below theſe Banks there ſhould be an open Drain left, at leaſt 1 Foot deep, and 10 or 11 Inches wide, that there may be Room for the Water to paſs through: Theſe larger Drains ſhould be at convenient Diſtances, and ſmaller Drains of about 6 or 7 Inches wide, and the Hollow under the Buſhes 8 or 9 Inches deep, ſhould be cut acroſs the Ground, which ſhould diſcharge the Water into theſe larger Drains. The Number and Situation of them, muſt be in Proportion to the Wetneſs of the Land; and the Depth of Earth above the Buſhes, muſt alſo be proportioned to the intended Uſe of the Land; for if it is arable Land to be ploughed, it muſt not be ſhallower than 14 Inches, that there may be ſufficient Depth for the Plough, without diſturbing the Buſhes; but for Paſture Land, 1 Foot deep will be full enough; for when the Buſhes lie too deep in ſtrong Land, they will have little Effect, the Ground above will bind ſo hard, as to detain the Wet on the Surface. When the Drains are dug, there ſhould be prepared a Quantity of good Bruſh Wood, the larger Sticks ſhould be cut out to Pieces of about 16 or 18 Inches in Length, which ſhould be laid acroſs upon the two Side Banks of the Drain, at about 4 Inches Diſtance; then cover theſe Sticks with the ſmaller Bruſh Wood, Furz, Broom, Heath, or any other Kind of Bruſh, laying it Lengthwiſe pretty cloſe; on the Top of theſe may be laid Ruſhes, Flags, &c. and then the Earth laid on to cover the whole. Theſe Sort of Drains will continue good for a great Number of Years, and are never liable to the Inconveniences of the other, for the Water will find an eaſy Paſſage through them; and where there is Plenty of Bruſh Wood, they are made at an eaſy Expence; but in Places where Wood is ſcarce, it would be chargeable to make them: However, in this Caſe, it would be a great Advantage to theſe Lands, to plant a ſufficient Number of Cuttings of Willow, or the black Poplar, on ſome of the moiſt Places, which would furniſh Bruſh Wood for theſe Purpoſes in 4 or 5 Years; and as the Expence of planting theſe Cuttings is trifling, there cannot be a greater Advantage to an Eſtate which wants draining, than to practiſe this Method.

In Countries where there is Plenty of Stone, that is the beſt Material for making theſe under Ground Drains; for when theſe are properly made, they will never want repairing.

The beſt Time of the Year for making theſe Drains is about *Michaelmas*, before the heavy Rains of Autumn fall, becauſe at this Seaſon the Land is uſually dry, ſo that the Drains may be dug to a proper Depth; for when the Ground is wet, it will be very difficult to dig to any Depth, becauſe the Water will drain in wherever there is an Opening in the Ground.

When theſe Drains are made, and the Water carried off the Land, it will be proper to pare off the Ruſhes, Flags, &c. which may be laid in Heaps in proper Places to rot, and will afford a good Manure for the Land. The Ground muſt alſo be ploughed to deſtroy the Roots of noxious Weeds, and if it be laid fallow for one Seaſon, and ploughed two or three Times, it will greatly mend the Land. The Ruſhes and Flags which were pared off the Ground when rotten, ſhould be ſpread over the Surface, and the Graſs Seed ſown thereon, which will greatly forward the Graſs, ſo that it may ſoon be brought to a good Turf; which Land thus mended, has been let for four Times the Rent it was ſet at before.

There are ſome Perſons, who, after they have pared off the Flags, Ruſhes, &c. from their Land, lay them in ſmall Heaps, and burn them in dry Weather, then ſpread the Aſhes on the Land to improve it, which is a good Method, where a Perſon is in Haſte to have Graſs again; but where the Ground can be fallowed one Year, it will looſen the Soil, and more effectually deſtroy the Roots of all noxious Weeds; and the Ruſhes, &c. when rotted, will afford a much larger Quantity of Manure for the Land, than when it is burnt: Beſides, this can only be practiſed in the Summer Seaſon, when the Weather is very dry; for if there ſhould fall much Rain, the Fires will go out, and it will be impracticable to burn it. But where the Method of burning is practiſed, the Heaps ſhould not be too great, and it ſhould burn very ſlowly; which will render the Aſhes a much better Manure, than where the Fire is too violent, or the Heaps too large; for in this Caſe, the inner Part will be over burnt, before the Fire reaches the Outſide of the Heap.

As the draining of cold wet Lands is a great Improvement to them, ſo the floating or watering of dry looſe Land is not a leſs Advantage to them. This may be eaſily effected where there are Rivers, or Reſervoirs of Water, which are ſituated above the Level of the Ground deſigned to be floated, by under Ground Drains (made after the Manner of thoſe before directed for draining Land,) through which the Water may be conveyed at proper Seaſons, and let out on the Ground: In order to this, there muſt be good Sluices made at the Heads of the Drains, ſo that the Water may never get out, but at ſuch Times as is required; for if this be not taken Care of, the Water, inſtead of improving the Land, will greatly damage it.

But where the Land lies ſo high, that there is no Water in the Neighbourhood lying above its Level, it will be more expenſive; becauſe in ſuch Caſe, the Water muſt be raiſed by Machines, from Reſervoirs or Streams which lie below it. The moſt common Engine uſed for this Purpoſe is the *Perſian* Wheel (which, being well deſcribed and figured in *Woolridge*'s *Art of Huſbandry*[c] is needleſs for me here to repeat). Yet notwithſtanding the Expence of raiſing the Water, it has been found greatly advantageous in many Parts of *England*, to drown the Lands, for the Profit has many Times more than doubled the Charge.

The Time for drowning Land, is uſually from *November* to the End of *April*; but though this is the general Practice, yet I cannot approve of it for many Reaſons. The firſt is, that by the Wet lying continually on the Ground in Winter, the Roots of the finer Sort of Graſs are rotted and deſtroyed; and by letting on of the Water, at the Seaſon when the Seeds of Docks, and other bad Weeds, which commonly grow by River Sides, are falling, theſe Seeds are carried upon the Land, where they remain and grow, and fill the Ground with bad Weeds, which is commonly the Caſe with moſt of the Water Meadows in *England*, the Graſs in general being deſtroyed; ſo that Ruſhes, Docks, and other Trumpery, make up the Burden of theſe Lands; but if theſe Meadows were judiciouſly managed, and never floated till *March* or *April*, the Quantity of ſweet good Graſs would be thereby greatly increaſed, and the beautiful Verdure of the Meadows preſerved. Where the Land is very hot and dry, and it lieth convenient to be watered at a ſmall Expence, it ſhould be repeated every Week in dry hot Weather, which will prove a great Advantage to the Land. But whenever this is done, there ſhould no Cattle be admitted while it is wet, for they will poach, and ſpoil the Turf.

Another great Improvement of Land, is by burning it, which, for ſour, heathy, and ruſhy Land, be it either hot or cold, wet or dry, is a very great Improvement; ſo that ſuch Lands will, in 2 or 3 Years after burning, yield more, excluſive of the Charges, than the Inheritance was worth before; but this is not to be practiſed on rich fertile Land, for as the Fire deſtroys the acid Juice, which occaſions Sterility in the poor Land, ſo it will in like Manner conſume the good Juices of the richer Land, and thereby impoveriſh it, ſo that it hath been with great Reaſon diſuſed in deep rich Countries.

The uſual Method of burning Land is, to pare off the Turf with a Breaſt Plough, turning it over as it is cut, that it may dry the better. And if it proves hot dry Weather when this Work is done, then it needs no more turning; but if Rain ſhould fall, it muſt be turned, and the Turfs ſet a little hollow, that they may dry the better, and when they are thorough dry, they may be laid on ſmall Heaps, about half a Cart Load on a Heap, or leſs, for the ſmaller the Heaps are, provided there is Quantity enough to make a good Fire, ſo as to conſume the whole to Aſhes, it is the better; if the Turf be full of fibrous Roots, or hath much Moſs or Fern on it, it will burn without any additional Fuel, but if it hath not, the Heaps ſhould be raiſed on ſmall Bundles of Heath, Fern, Gorze, *&c.* which will ſet the whole on Fire; yet there ſhould be no more of theſe Things applied, than what is neceſſary to kindle the Fire, becauſe the ſlower the Turf conſumes, the better will be the Aſhes. When the Turf is wholly conſumed, the Aſhes ſhould be equally ſcattered over the Ground in a calm Day, leſt the Wind ſhould drive it in Heaps. Then the Land ſhould be gently ploughed, and the Seeds ſown thereon, for if the Ground is ploughed too deep, the Aſhes will be buried too low for the Roots of the Graſs or Corn to reach them, for a conſiderable Time; nor ſhould the Aſhes lie too near the Surface, becauſe then the Roots will reach them too ſoon, and the Strength of the Aſhes will be ſpent to nouriſh only the Blade, ſo that the Corn will grow too rank in Winter, and when the Roots in the Spring ſtrike down lower, they will meet with a poorer Soil, nor will the Stalks and Ears have ſo much Advantage from the Improvement, as the uſeleſs Blade. But where Care is taken in this Particular, it is wonderful what Succeſs it hath; for by this Method the pooreſt Plains, and ſour heathy Lands, have been rendered as fertile as almoſt any good cultivated Ground whatever.

It is alſo a very great Improvement, where Land is overgrown with Broom, Furz, *&c.* to ſtub them up by the Roots, and when they are dry, lay them on Heaps, and cover them with the Parings of the Earth, and burn them, and ſpread the Aſhes over the Ground. By this Method vaſt Tracts of Land, which at preſent produce little or nothing to their Owners, might be made good at a ſmall Expence, ſo as to become good Eſtates to the Proprietors.

There are ſeveral other Methods of improving Land, beſide thoſe here mentioned, as by planting Wood, or adapting the ſeveral Sorts of Plants to the particular Soils with which they agree; but as moſt of theſe Things are treated of under the ſeveral Articles where theſe Plants are mentioned, I ſhall forbear to repeat them in this Place, but ſhall beg Leave to offer a few general Hints on the preſent Situation of the Lands in *England*, which may probably excite ſome abler Hand to undertake a fuller and more complete Diſquiſition of this Subject.

For ſome Years paſt the Quantity of Corn raiſed in *England*, has greatly exceeded the Conſumption, ſo that great Quantities of Corn have been exported, by which great Sums of Money have been brought into *England*; but this was accidental, for had not the Crops failed in the neighbouring Countries, there would have been no Demand for the Produce of *England*, ſo that the Quantity here grown muſt have reduced the Price ſo low, as to have almoſt ruined the Farming Intereſt; nor is it poſſible to contrive any Scheme, in a Country circumſtanced as this, whereby the Publick may not, at Times, ſuffer from the extravagant Price, which, in a Scarcity, this Commodity may be raiſed to; or, on the other Hand, the Farmers are not almoſt undone by the low Price which it is often reduced to, in Times of Plenty; and ſurely there can be no one Thing more worthy of the ſerious Attention of every Perſon, who has the leaſt Regard for the publick Welfare, than this, of always making ſuch Proviſion of Corn againſt accidental Scarcities, as that the Inhabitants may never be diſtreſſed for want of the Staff of Life, or the Price be ſo high, that the common People cannot purchaſe it. If I am not greatly miſtaken, there has been, within the Space of three or four Years, ſuch a Diſproportion in the Price of Corn, as can hardly be conceived, and this within the Memory of Numbers of Perſons; the Time I mean is between 1705, and 1709, in the Compaſs of which Time the Peck Loaf of fine Bread was riſen from fourteen Pence to four Shillings and two Pence; the low Price of this Commodity was as detrimental to the Farmers, as the extravagant Price was afterward to the Publick, neither of which would have ſo ſeverely felt the Effects, had there been publick Granaries where the Corn might have been depoſited, and this purchaſed from the Farmer, at a Price by which he might live, at the publick Expence, and ſold out again at an eaſy Rate in Times of Scarcity; but I fear this is not an Age for encouraging any Scheme for publick Utility, when in every Thing of this Kind, however beneficial it may be to the Country, and though propoſed as ſuch to the Publick, if it meets with any Reception, it is with a View to turn it to private Intereſt; the Practice of turning all Things into private Jobs, has ſo much prevailed of late Years, as to have almoſt extinguiſhed every ſocial Virtue; but I fear I may have incurred the Cenſure of many for this Digreſſion; but, be it as it will, I could not omit it, when it ſo properly came in my Way; and as it is from a ſincere Love and Regard to my Country, that I have mentioned this, ſo it may be hoped, that if any harſh Expreſſion has been uſed, it will be forgiven. But to return to my Subject; As the Quantity of Land now in Tillage is very great in *England*, from the Deſtruction of Woods. the ploughing up of Downs, the incloſing Commons, &c. ſo that, unleſs there happens a Failure in the Crops of Corn in great Part of *England*, the Markets muſt be ſo low, that the Farmer will always find it difficult to ſupport his Family, and pay his Rent, the firſt muſt be done, let the Landlord fare as he will, for the Farmers know, that when the Farms are occupied by the Landlords, few of them can make the Produce of the Land pay their Expence, ſo that the whole Rent is ſunk, beſides the Trouble and Fatigue of managing the Farms; and it is greatly to be feared, from the preſent Condition of the Farmers in general, that many Landlords will be obliged to undertake this diſagreeable Affair, which will be the more ſo, as their Lands will be left without Stock, and the Soil exhauſted, and overgrown with Weeds, which will require ſome Years to put into proper Condition, and will be attended with great Expence.

The extraordinary Price which Corn bore ſome Years ſince, tempted the Farmer to break up the Downs in many Parts of *England*; and the Landlords were brought to comply with the Requeſt of the Farmer, for the Sake of a little Advance of the Rent, not conſidering the future Conſequence of it; and hereby great Extents of Downs have been ruined, and not likely to be recovered again, for the Soil in many Places was not more than 4 or 5 Inches deep, upon Beds of Flints, or Chalk, which, in ploughing, were turned up on the Surface; and the little Soil which covered them, was in a few Years ſo much exhauſted, as not to produce the Quantity of Grain which was ſown upon them; and as there was no Probability of procuring Dreſſing for the Lands, the Farmers have been obliged to throw them up, which now lie waſte, and appear like Quarries of Flints, or Beds of Chalk, without Graſs, or almoſt any other Plant, growing upon them. By this Paſſion for ploughing, the Farmers have leſſened their Stock of Cattle, and, of Conſequence, their Quantity of Manure has been leſſened in Proportion, ſo that they have either been obliged to purchaſe Dreſſing at a great Expence, or drain their Lands of their vegetative Quality; by the former Method, when Grain bears a low Price, the Farmer is ruined, and by the latter, every one muſt know what will be the Conſequence to both Tenant and Landlord, therefore it is a Matter of great Concern to the Proprietors of Lands, to ſee that no more Ground in their Farms is kept in Tillage, than the Tenant can ſupply with Dreſſing, ſo as to maintain the Land in Heart, and that a proper Stock of Cattle be kept up, in Proportion to the Size of the Farms, which cannot be done where there is not a Proportion of Paſture kept to that of the arable Land in each Farm. There are many Perſons, who, by a Miſtake in the Article of incloſing Lands, are likely to fall into a great Error, by ſuppoſing that the incloſing of Commons will be a great Advantage to their Eſtates, and perhaps there may be Tenants on their Eſtates, who may encourage the Gentlemen ſo to do, from a preſent Intereſt of their own; but whereever this has been done, the Eſtates have ſoon fallen in their Rents, much lower than the Addition made by the incloſing the Commons, which muſt always be the Caſe; for if there is not common Paſture, where the Farmers can turn out their Cattle in Summer, it cannot be ſuppoſed, they can keep up a Stock of live Cattle upon their incloſed Paſture; ſo that, although the dividing and incloſing the Lands in the common Fields, would be a very great Benefit, yet the deſtroying of Paſture Commons would be a national Diſadvantage and Loſs. There are many other Particulars, which might be here enumerated, to ſhew the Cauſe of the low Condition of the Farmers in general; but theſe few Hints may probably lead ſome Perſons of abler Heads to the Conſideration of this Affair, ſo I ſhall not enlarge upon them here.

LANIGEROUS TREES are ſuch as bear a woolly or downy Subſtance, as is commonly contained in the Katkins of the Willows, &c.

LANTANA. *Lin. Gen. Pl.* 683. *Camara. Plum. Nov. Gen.* 32. *Tab.* 2. *American Viburnum*, or *Camara.*

The *Characters* are,

The Empalement of the Flower is cut into 4 *Segments. The Flower is monopetalous, of an irregular Shape, having a cylindrical Tube, which extends beyond the Empalement, and is ſpread open at the Brim, where it is divided into* 5 *Parts In the Center of the Flower is ſituated the Pointal, ſupporting a crooked Stigma, attended by* 4 *Stamina,*

mina, 2 being longer than the other. The Pointal afterward changes to a roundiſh Fruit, opening into 2 Cells, and incloſing a roundiſh Seed.

The *Species* are,

1. LANTANA *foliis oppoſitis, caule aculeato ramoſo, floribus capitato-umbellatis.* *Lantana* with Leaves growing oppoſite, a branching prickly Stalk, and umbellated Flowers growing in Heads. *Viburnum Americanum odoratum, urticæ foliis latioribus ſpinoſum, floribus miniatis. Pluk. Alm.* 285. *Tab.* 223. Sweet prickly *American Viburnum*, with broad Nettle Leaves, and Carmine Flowers.

2. LANTANA *caule inermi, foliis lanceolatis dentatis alternis, floribus corymboſis.* *Lantana* with a ſmooth Stalk, Spear-ſhaped indented Leaves placed alternate, and Flowers growing in round Bunches. *Periclymenum rectum, ſalviæ foliis majoribus oblongis, mucronatis, ſubtus villoſis, alternatim ſitis, flore & fructu minoribus. Sloan. Cat. Jam.* 164. Upright Honeyſuckle with the larger, oblong, acute-pointed Sage Leaf, which is hairy on its under Side, and placed alternate, and a ſmaller Flower and Fruit.

3. LANTANA *caule ramoſo lanuginoſo, foliis orbiculatis crenatis oppoſitis, floribus capitatis.* *Lantana* with a hairy branching Stalk, round crenated Leaves placed oppoſite, and Flowers collected in Heads. *Periclymenum rectum, ſalviæ folio rugoſo minore, ſubrotundo. Sloan. Cat. Jam.* 164. Upright Honeyſuckle with a ſmaller rough roundiſh Leaf.

4. LANTANA *foliis ternis, ſpicis oblongis imbricatis. Lin. Sp. Pl.* 626. *Lantana* with Leaves placed by Threes round the Stalk, and oblong imbricated Spikes of Flowers. *Camara trifolia, purpuraſcente flore. Plum. Nov. Gen.* 32. Three-leaved *Camara* with a purpliſh Flower.

5. LANTANA *caule aculeato, foliis oblongo-cordatis ſerratis oppoſitis, floribus corymboſis.* *Lantana* with a prickly Stalk, oblong Heart-ſhaped ſawed Leaves placed oppoſite, and Flowers growing in a Corymbus. *Periclymenum rectum urticæ folio hirſuto majore, flore flavo. Sloan. Cat. Jam.* 163. Upright Honeyſuckle with a larger Nettle Leaf, and a yellow Flower.

6. LANTANA *caule inermi, foliis ovato-lanceolatis, ſerratis, rugoſis, floribus capitatis lanuginoſis.* *Lantana* with a ſmooth Stalk, oval Spear-ſhaped rough ſawed Leaves, and Flowers growing in woolly heads. *Periclymenum rectum, ſalviæ folio rugoſo, majore, ſubrotundo & bullato. Sloan. Cat. Jam.* 163. Upright Honeyſuckle with a large rough Sage Leaf, which is roundiſh and ſtudded.

7. LANTANA *foliis oblongo-ovatis acuminatis ſerratis rugoſis alternis, floribus capitatis.* *Lantana* with oblong oval-pointed ſawed Leaves, which are rough and placed alternate, and Flowers growing in Heads. *Periclymenum rectum, ſalviæ folio rugoſo, minore, bullato, flore albo. Sloan. Cat.* 163. Upright Honeyſuckle with a ſmaller rough Sage Leaf, which is ſtudded, and a white Flower.

8. LANTANA *caule inermi, foliis ovatis ſerratis, floribus capitatis alaribus ſeſſilibus.* *Lantana* with a ſmooth Stalk, oval ſawed Leaves, and Flowers growing in Heads, proceeding from the Wings of the Leaves and ſitting cloſe to the Stalks. *Camara foliis urticæ, floribus minoribus albis, ex alis foliorum prodeuntibus. Houſt.* *Camara* with a Nettle Leaf, and ſmaller white Flowers proceeding from the Wings of the Leaves.

9. LANTANA *foliis quaternis, caule aſpero, ſpicis oblongis.* Four-leaved *Lantana* with a rough Stalk, and oblong Spike of Flowers. *Periclymenum rectum humilius, folio rugoſo majore, flore purpureo, fructu oblongo, eſculento purpureo. Sloan. Cat. Jam.* 164. Lower upright Honeyſuckle with a larger rough Leaf, a purple Flower, and an oblong purple eſculent Fruit.

10. LANTANA *caule inermi, foliis ovato-lanceolatis oppoſitis, floribus capitatis pedunculis longiſſimis.* *Lantana* with a ſmooth Stalk, oval Spear-ſhaped Leaves, placed oppoſite, Flowers collected in Heads, and very long Foot Stalks. *Periclymenum rectum, ſalviæ folio rugoſo, longo & anguſtiſſimo. Sloan. Cat.* 164. Upright Honeyſuckle with a rough Sage Leaf, which is long and narrow.

11. LANTANA *foliis oppoſitis, caule inermi ramoſo, floribus capitato-umbellatis. Lin. Gen. Pl.* 627. *Lantana* with Leaves placed oppoſite, a ſmooth branching Stalk, and umbellated Flowers collected in Heads. *Periclymenum rectum, urticæ folio hirſuto majore, flore miniato. Houſt.* Upright Honeyſuckle with a hairy Nettle Leaf, and a Carmine Flower.

12. LANTANA *foliis alternis ſeſſilibus, floribus ſolitariis. Hort. Cliff.* 320. *Lantana* with alternate Leaves, ſitting cloſe to the Stalks, and Flowers growing ſingly. *Jaſminum Africanum, illicis folio, flore ſolitario ex foliorum alis proveniente albo. Com. Plant. Rar.* 6. *Tab.* 6. *African* Jaſmine with an Ilex Leaf, and a ſolitary white Flower coming from the Wing of the Leaves.

The 1ſt Sort is prettty common in the *Engliſh* Gardens, where there are Collections of exotick Plants; this grows naturally in *Jamaica*, and moſt of the other Iſlands in the *Weſt-Indies*, where it is called wild Sage. It riſes with a woody Stalk, 3 or 4 Feet high, ſending out many Branches, which have 4 Angles, and are armed with ſhort crooked Spines. The Leaves are placed by Pairs oppoſite; they are oval, Spear-ſhaped, about an Inch and a Half long, and three Quarters of an Inch broad, hairy, and ſtand on ſhort Foot Stalks; toward the End of the Branches the Flowers come out from the Wings of the Stalks, 2 Foot Stalks ariſing from the ſame Joint, 1 on each Side the Stalk; they are near 2 Inches long, and are terminated by roundiſh Heads of Flowers, thoſe which are on the Outſide, and form the Border, are firſt of a bright red, or ſcarlet Colour; theſe change to a deep purple before they fall. Thoſe Flowers which are in the Center, are of a bright yellow, but after ſome Time fade to an Orange Colour. The Flowers are ſucceeded by roundiſh Berries, which, when ripe, turn black, having a pulpy Covering over a ſingle hard Seed. This Plant in the *Weſt-Indies* continues to flower moſt Part of the Year, but in *England* they begin to flower, and continue in Succeſſion till near *Chriſtmas*, and are ſometimes ſucceeded by ripe Seeds.

The 2d Sort grows naturally in *Jamaica*; this riſes with a ſlender, ſmooth, ſhrubby Stalk, about 4 Feet high, dividing into many ſmall Branches which grow erect, and are garniſhed with Spear-ſhaped Leaves about 2 Inches long, and 1 broad, indented on their Edges, and hoary on their under Side, ſtanding alternate on ſhort Foot Stalks. Toward the End of the Branches the Foot Stalks of the Flowers ariſe alternately from the Wings of the Leaves; theſe are very ſlender, and ſupport ſmall Heads of pale purple Flowers, which are ſucceeded by ſmall purple Berries, each having 1 Seed. This flowers at the ſame Time with the former Sort. The Seeds of this Sort were firſt ſent me from *La Vera Cruz*, but I have ſince received them from *Jamaica*.

The 3d Sort was ſent me from *La Vera Cruz*, it riſes with a ſhrubby Stalk, about 4 Feet high, dividing into ſeveral upright Branches. The Leaves are oblong, and ſawed on their Edges, ſtanding by Pairs oppoſite, on the lower Part of the Branches, but toward the upper Part they are placed by Threes round the Branches. The Foot Stalks of the Flowers come out from the Wings of the Leaves; they are near 3 Inches long, ſuſtaining an oblong Spike of purple Flowers, which come out from imbricated Scales, which end in acute Points. The Flowers are ſucceeded by pretty large purple Berries. This flowers at the ſame Time with the former Sorts.

The Seeds of the 4th Sort were ſent me from the *Havanna*, by the late Dr. *Houſtoun*; this riſes with a ſhrubby Stalk, about 3 Feet high, covered with a gray Bark, which is woolly. It divides into Branches by Pairs, garniſhed with round Leaves, indented on their Edges, whoſe upper Surface is corrugated and rough, like thoſe of Sage; they are placed oppoſite, ſtanding on ſhort Foot Stalks. At the End of the Branches ariſe the Foot Stalks of the Flowers, which are ſhort, and ſuſtain a globular Head of purple Flowers; theſe are ſucceeded by pretty large purple Berries, containing 1 Seed. This flowers at the ſame Time with the former Sorts.

There is a Variety of this with white Flowers, whoſe Leaves are not quite ſo round, nor are they crenated on their Edges, but I ſuſpect they both come from the ſame Seeds, ſo I have not enumerated it as a diſtinct Species.

The 5th Sort was ſent me from *La Vera Cruz*, by the late Dr. *Houſtoun*; this riſes with a woody branching Stalk, 4 or 5 Feet high, garniſhed with oblong Heart-ſhaped Leaves, which are ſawed on their Edges, and end in acute Points. At the End of the Branches the Flowers come out in round Bunches, ſtanding on ſlender upright Foot Stalks, about 1 Inch long. The Flowers are yellow, and grow in looſer Bunches, or Heads, than thoſe of the former Sorts, but flowers at the ſame Time.

The 6th Sort riſes with a woody branching Stalk, 5 or 6 Feet high, covered with a dark brown Bark. The Branches are more divided than thoſe of moſt other Sorts, and are much more ligneous. The Leaves are 2 Inches and a Half long, and 1 and a Quarter broad, deeply ſawed on their Edges, and their upper Surface very rough, and many of them cloſely ſet with white prominent Spots as if ſtudded; theſe are placed alternately on the Branches. The Flowers come out from the Wings of the Stalk, ſtanding on pretty long Foot Stalks; they are white, and collected in ſmall woolly Heads. This flowers about the ſame Time with the former Sorts.

The 7th Sort riſes with a branching ſhrubby Stalk about 4 Feet high, covered with a dark brown Bark, and garniſhed with ſmall, oblong, oval Leaves, ending in acute Points; they are 1 Inch long, and half an Inch broad, very much veined on their upper Side, ſtanding alternately pretty cloſe to the Branches. The Flowers come out at the End of the Branches, on ſhort Foot Stalks in cloſe ſmall Heads; theſe are white, and make but little Appearance. It flowers at the ſame Time with the former.

The 8th Sort was ſent me by the late Dr. *Houſtoun*, from *Campeachy*; this hath a ſlender ſhrubby Stalk, which riſes 3 or 4 Feet high, dividing into many ſlender, ſmooth, ſquare Branches, garniſhed with ſmall oval ſawed Leaves, placed oppoſite; from the Wings of the Stalk, at every Joint, come out the Flowers; they are ſmall, white, and collected in cloſe Heads; theſe come out by Pairs oppoſite, and ſit cloſe to the Branches. This flowers at the ſame Time with the former.

The 9th Sort is annual; this was firſt ſent me from *La Vera Cruz*, but I have ſince received the Seeds from the North Side of the Iſland of *Jamaica*; this riſes with a ſtrong upright rough Stalk, near 3 Feet high, dividing into 2 or 3 erect Branches, garniſhed with oblong, oval, ſawed Leaves, ending in acute Points; they are placed by Fours at each Joint, and are a little woolly on their under Side. The Flower Stalks ariſe by Pairs, and ſometimes 3 come out at the ſame Joint; they are from 2 to 3 Inches long, and ſuſtain a thick Spike of large purple Flowers, which are ſucceeded by large purple Berries, which are very ſucculent, and are frequently eaten by the Inhabitants. This Sort will flower in *July*, provided the Plants are raiſed early in Spring, and brought forward, and the Seeds will ripen in Autumn, ſoon after which the Plants decay.

The 10th Sort grows naturally in *Jamaica*, from whence the late Dr. *Houſtoun* ſent me the Seeds; this riſes with a ſlender, ſmooth, branching Stalk, 3 Feet high. The Branches are garniſhed with oval Spear-ſhaped Leaves, 2 Inches long, and 1 broad; they are crenated on their Edges, and rough on their upper Side, ſtanding by Pairs oppoſite, on very ſhort Foot Stalks. The Flowers come out from the Wings of the Stalk, on very long Foot Stalks; they are placed by Pairs oppoſite, the whole Length of the young Branches, ſuſtaining ſmall round Heads of white Flowers; theſe appear at the ſame Time with the other Sorts, but rarely produce Seeds in *England*.

The 11th Sort was ſent me from *Jamaica* by the late Dr. *Houſtoun*; this riſes with a ſhrubby Stalk 5 or 6 Feet high, dividing into many ſtrong Branches, pretty cloſely garniſhed with oval, pointed, crenated Leaves, placed oppoſite; they are about an Inch and a Half long, and as much broad at their Baſe, but draw to a Point at the Top, rough on their upper Side. The Flowers come out from the Wings of the Leaves on each ſide the Branches, ſtanding on pretty long Foot Stalks; they are of a Carmine Colour, and grow in umbellated Heads. This flowers at the ſame Time with the former Sorts, but rarely produces Seeds in *England*.

Theſe Plants are all of them eaſily propagated by Cuttings except the 9th, which is an annual Plant, ſo can only be propagated by Seeds. They may alſo be propagated by Seeds, which ſeveral of the Sorts produce in *England*, and the others may be eaſily procured from the *Weſt-Indies*, where there are a greater Variety of theſe Plants growing naturally, than are at preſent known in *Europe*; they are all of them called Wild Sage, by the Inhabitants of the *Britiſh* Iſlands, but they do not diſtinguiſh the Sorts. Theſe Seeds ſhould be ſown in Pots filled with light Earth, and plunged into a hot Bed of Tan; the Reaſon for my adviſing them to be ſown in Pots, is, becauſe the Seeds frequently remain long in the Ground before they vegetate; therefore if the Plants ſhould not come up the ſame Year, the Pots ſhould be placed in the Stove in Winter, and the following Spring plunged into a new hot Bed, which will bring up the Plants. When theſe are fit to remove, they ſhould be each planted in a ſmall Pot and plunged into another hot Bed, obſerving to ſhade them till they have taken new Root; then they ſhould have Air admitted to them every Day, in Proportion to the Warmth of the Seaſon, to prevent their being drawn up with weak Stalks; afterward they muſt be treated as other Plants from the ſame Country, till they have obtained Strength; then they may be removed into an airy Glaſs Caſe, or a dry Stove, where they may have a large Share of Air in warm Weather, but protected from the Cold. This is neceſſary for the young Plants, which ſhould not the firſt Year be expoſed to the open Air, but afterward they may be placed abroad in the warmeſt Part of Summer, and in Winter placed on Stands in the dry Stove, where they will continue long in flower, and many of the Sorts will ripen their Seeds; but in Winter they ſhould be ſparingly watered, for much Moiſture will rot their Roots.

If they are propagated by Cuttings, the beſt Time for planting them is in *July*, after the Plants have been expoſed to the open Air for about a Month, by which Time the Shoots will be hardened ſo as to be out of Danger of rotting with a little Moiſture. Theſe Cuttings ſhould be planted in ſmall Pots filled with light Earth, and plunged into a moderate hot Bed; and if they are ſcreened from the Violence of the Sun in the Middle of the Day, they will be rooted in about 6 Weeks Time, when they muſt be hardened gradually to bear the open Air, and afterward treated as the old Plants.

The laſt Sort has been long in the *Engliſh* Gardens, and is commonly called the Ilex-leaved Jaſmine. This Sort riſes with a ſhrubby Stalk 5 or 6 Feet high, ſending out many irregular Branches, cloſely garniſhed with thin oval Leaves ending in Points, and ſawed on their Edges; theſe embrace the Branches with their Baſe, and from the Boſom of each Leaf comes out 1 ſolitary white Flower, cut at the Top into 5 Parts, and at firſt Sight has the Appearance of a Jaſmine Flower, but when cloſer viewed, the Tube will be found curved in the ſame Manner with thoſe which Dr. *Linnæus* titles ringent Flowers. The Flowers are not ſucceeded by Seeds in *England*, but the Plants are eaſily propagated by Cuttings, which, if planted on an old hot Bed any Time in *July*, and covered with a Bell or Hand Glaſs, and ſhaded from the Sun, will put out Roots in a Month or five Weeks; then they may be planted in Pots, and placed in the Shade till they have taken freſh Root, after which they may be removed to a ſheltered Situation, where they may remain till the Froſts come on. This Plant was brought from the *Cape of Good Hope*, ſo is not very tender, therefore may be preſerved in a good Green-houſe in Winter; but during that Seaſon it muſt have a large Share of Air in mild Weather, otherwiſe it it apt to grow mouldy, and this will cauſe the tender Branches to decay. In the Summer Seaſon it may be expoſed in the open Air, with other Green-houſe Plants, in a ſheltered Situation, where it will add to the Variety; and although the Flowers are ſmall, and are produced ſingly from between the Leaves, ſo do not make any great Appearance, yet as there is a Succeſſion of theſe Flowers moſt Part of the Year, and the Leaves continue green throughout the Year, it is worthy of a Place in every Collection of Plants.

LANUGINOUS, ſignifies downy, or to be covered with a ſoft Down, as a Quince.

LAPATHUM. *See* Rumex.

LAPSANA. *Lin. Gen. Pl.* 823. *Lampſana & Rhagadiolus. Tourn. Inſt. R. H.* 479. *Tab.* 272. Nipplewort.

The *Characters* are,

The Flower is compoſed of ſeveral hermaphrodite Florets, included in one common imbricated Empalement. The Florets have 1 *Petal, tubulous and ſtretched out at the Top, in ſhape of a Tongue; theſe have each* 5 *ſhort hairy Stamina, terminated by cylindrical Summits. The Germen is ſituated at the Bottom of the Floret, ſupporting a ſlender Style, crowned by a reflexed bifid Stigma; the Germen becomes an oblong three cornered Seed, ſituated in the Scale of the Empalement.*

The *Species* are,

1. Lapsana *calycibus fructûs angulatis, pedunculis tenuibus ramoſiſſimis. Hort. Cliff.* 384. Nipplewort with angular Empalements to the Fruit, and very narrow branching Foot Stalks. *Lampſana. Dod.* p. 675. Common Nipplewort.

2. Lapsana *calycibus fructûs undique patentibus, radiis ſubulatis, foliis lanceolatis indiviſis. Hort. Up.* 245. Nipplewort with Empalements to the Fruit, ſpreading open every Way, Awl-ſhaped Rays, and Spear-ſhaped undivided Leaves. *Rhagadiolus alter. Cæſalp.* 511. Another *Rhagadiolus*.

3. Lapsana *calycibus fructûs undique patentibus, radiis ſubulatis, foliis lyratis. Hort. Upſ.* 245. Nipplewort with Empalements to the Fruit ſpreading open every Way, Awl-ſhaped Rays, and Harp-ſhaped Leaves. *Rhagadiolus Lampſanæ foliis. Tourn. Cor.* 36. *Rhagadiolus* with a Nipplewort Leaf.

4. Lapsana *calycibus fructûs toruloſis depreſſis obtuſis ſeſſilibus. Lin. Sp. Pl.* 811. Nipplewort with a depreſſed knotted Empalement which is obtuſe, and ſits cloſe to the Branches. *Zacintha ſive cichorium verrucarium. Tourn. Inſt.* 476. *Zacintha*, or warted Cichory.

The 1ſt Sort is a common Weed, which grows by the Side of Foot Paths and Hedges in moſt Parts of *England*, ſo is not permitted to have Room in Gardens.

The 2d and 3d Sorts grow naturally in *Portugal*, from whence I have received their Seeds. Theſe are annual Plants, of no Beaty or Uſe, but are preſerved in Botanick Gardens for Variety. If the Seeds of theſe are permitted to ſcatter, the Plants will come up without Trouble, and 2 or 3 of them will be enough to leave to keep the Sorts.

The 4th Sort grows naturally in *Italy*; this is alſo an annual Plant, of neither Uſe or Beauty, but is like the others kept for Variety. If the Seeds of this Sort ſcatter in the Autumn, the Plants will come up better than if ſown in the Spring. The Plants require no Culture, but will thrive like Weeds.

LARIX. *Tourn. Inſt. R. H.* 586. *Tab.* 353. *Pinus. Lin. Gen. Pl.* 956. The Larch Tree; in *French*, *Meléſe*.

The *Characters* are,

It hath male and female Flowers growing ſeparate on the ſame Tree. The male Flowers are diſpoſed in a ſcaly Katkin, theſe have no Petal, but a great Number of Stamina connected in a Column below, but ſeparated at their Points, and terminated by erect Summits. The female Flowers are diſpoſed in a conical Shape, having no Petals; theſe are placed by Pairs under each Scale, having a ſmall Germen, ſupporting an Awl-ſhaped Style, crowned by a ſingle Stigma. The Germen becomes a Nut with a membraneous Wing, incloſed in the Scales of the Cones.

The *Species* are,

1. LARIX *foliis deciduis, conis ovatis obtuſis.* Larch Tree with deciduous Leaves, and oval obtuſe Cones. *Larix folio deciduo, conifera. J. B.* 1. p. 265. Common Cone-bearing Larch Tree.

2. LARIX *foliis deciduis, conis mucronatis ſquamis acutis.* Larch Tree with deciduous Leaves, and pointed Cones having acute Scales.

3. LARIX *foliis acutis perennantibus, conis obtuſis.* Larch Tree with acute ever-green Leaves and obtuſe Cones. *Cedrus conifera, foliis laricis. C. B. P.* 490. Cone-bearing Cedar with a Larch Leaf, or the Cedar of *Lebanus*.

The 1ſt Sort grows naturally on the *Alps* and *Appennines*, and of late Years has been very much propagated in *England*. This Tree is of quick Growth, and will riſe to the Height of 50 Feet; the Branches are ſlender, and their Ends generally hang downward Theſe are garniſhed with long narrow Leaves, which ariſe in Cluſters from one Point, and ſpread open above like the Hairs of a Painter's Bruſh; they are of a light green, and fall away in Autumn, like other decidous Trees. In the Month of *April* the male Flowers appear, which are diſpoſed in Form of ſmall Cones; the female Flowers are collected into oval obtuſe Cones, which in ſome Species have bright purple Tops, and in others they are white: Theſe Differences are accidental, for I have found the Seeds taken from either of theſe Varieties, will produce Plants of both Sorts; the Cones are about 1 Inch long, obtuſe at their Points, and the Scales lie over each, ſmooth; under each Scale there is generally lodged 2 Seeds, which have Wings.

There are 2 other Varieties of this Tree, one of which is a Native of *America*, and the other of *Siberia*; the latter requires a colder Climate than *England*, for they are very apt to die in Summer here, eſpecially if planted on a dry Soil. The Cones of this Sort which have been brought to *England*, ſeem to be in general larger than thoſe of the common Kind; but there is ſo little Difference between the Trees in their characteriſtick Notes, as not be diſtinguiſhed as diſtinct Species, though by the Growth of the Trees there is a remarkable Difference.

The Cones of the ſecond Sort were ſent from *China*, to the Right Hon. the Earl of *Northumberland*, who was ſo good as to communicate ſome of the Seeds to me, which were ſown in the *Chelſea* Garden, where they ſucceeded, as they alſo did in his Lordſhip's Garden at *Stanwick*. The Cones of this Sort were much larger than thoſe of the common Sort, and ended in acute Points; the Scales were prominent like thoſe of the *Scotch* Pine, and had ſo little Reſemblance to thoſe of the Larch, that every one who ſaw them, imagined they were a Sort of Pine; they were titled, Fir good to keep up Banks. As theſe Plants made but little Progreſs the firſt Year, ſo were weak, and in the Autumn caſting off their Leaves, they were ſuppoſed to be dead, and moſt of the Plants were thereby loſt; but thoſe which eſcaped, afterward ſhot their Branches out horizontally, ſpreading cloſe to the Ground, and by their preſent Appearance, ſeem to be a Shrub which never will riſe upright. This Sort is ſo hardy, as to thrive in the open Air without any Protection.

The common Larch is now very plenty in moſt of the Nurſeries in *England*, and of late Years there has been great Numbers of the Trees planted; but thoſe which have been planted in the worſt Soil and in bad Situations, have thriven the beſt; for where Trees of equal Size have been planted in good Garden Earth at the ſame Time, the others on the cold ſtiff Land, have in 12 Years been twice the Height of thoſe planted in good Ground; which is an Encouragement to plant theſe Trees, ſince they will thrive in the moſt expoſed Situations, provided they are planted in Clumps near each other, and not ſingle Trees; nor ſhould the Plants which are planted in very open expoſed Places, be taken from warm Nurſeries, but rather raiſed as near to the Spot where they are to remain, as poſſible; nor ſhould the Plants be more than 3 or 4 Years Growth when planted, where they are deſigned to grow large; for though Trees of greater Size will remove very well, and grow ſeveral Years as well as if they had not been tranſplanted, yet after 20 or 30 Years Growth, they will frequently fail, where the young planted Trees have continued very vigorous.

Theſe Trees are raiſed from Seeds, which moſt Years ripen well in *England*: The Cones ſhould be gathered about the End of *November*, and kept in a dry Place till the Spring, when they ſhould be ſpread on a Cloth and expoſed to the Sun, or laid before a Fire, which will cauſe the Scales of the Cones to open, and emit their Seeds. Theſe Seeds ſhould be ſown on a Border expoſed to the Eaſt, where the Morning Sun only comes on it; or if they are ſown on a Bed more expoſed to the Sun, they ſhould be ſcreened with Mats, from the Sun in the Middle of the Day; for when the Plants firſt appear above Ground, they are very impatient of Heat; and when the Bed is much expoſed to the Sun, the Surface of the Ground will dry ſo faſt, as to require to have Water very often, which frequently rots the tender Stems of the Plants, which will be prevented by properly ſhading them while young, and afterward they will be in no Danger. Theſe young Plants ſhould be conſtantly kept clean from Weeds, and if they have made good Progreſs, they may be tranſplanted the following Autumn, otherwiſe they may remain in the Seed Bed another Year, eſpecially if the Plants are not too cloſe together. When they are tranſplanted, it ſhould be performed in the Autumn, as ſoon as their Leaves decay; they may be planted in Beds at about 6 Inches aſunder each Way, which will be Diſtance enough for the Growth of the Plants the two following Years, by which Time they will be fit to tranſplant where they are to remain.

When the young Trees are planted out for good, they need not be more than 8 or 10 Feet diſtant from each other, always planting them cloſer on expoſed Situations, than where they are more defended; after the Trees are planted, they will require no other Care but to keep them clean from Weeds for 3 or 4 Years till the Trees have obtained Strength, when they will over-top the Weeds, and prevent their Growth; but the Ground between theſe Trees ſhould not be dug, for that I have found has greatly ſtopped their Growth.

The *Siberian* Larch is of ſlow Growth in this Country, and when the Spring is mild, the Trees will begin to ſhoot early in *March*; and there are frequently ſharp Froſts after theſe Shoots are killed, and this ſtops the Growth of the Trees. Likewiſe when they are planted on a warm dry Soil, they are frequently killed by Drought in the Summer; therefore this is a very improper Tree for this Country, unleſs for ſome cold, moiſt, peaty Land, where they may probably thrive, and in ſuch Situations few other Trees will grow.

The *American* or black Larch, thrives pretty well upon moiſt Land, but on dry Ground will make but little Progreſs. A few of theſe Trees by way of Variety, may be allowed to have Place in every Collection of Trees deſigned for Pleaſure, but for Profit the common Larch is to be preferred.

In *Switzerland*, where theſe Trees abound, and they have a Scarcity of other Wood, they build moſt of their Houſes with it; and great Part of their Furniture is alſo made of the Wood, ſome of which is white, and ſome red, but the latter is moſt eſteemed. The Redneſs of the Wood is ſuppoſed to be from the Age of the Trees, and is not from any Difference between them. They frequently cut out the Boards into Shingles of a Foot ſquare, with which they cover their Houſes, inſtead of Tiles or other Covering; theſe are at firſt very white, but after they have been two or three Years expoſed, become as black as Charcoal; and all the Joints are ſtopped by the Reſin, which the Sun draws out from the Pores of the Wood, which is hardened by the Air, and becomes a ſmooth ſhining Varniſh, which renders the Houſes ſo covered impenetrable to either Wind or Rain; but as this is very combuſtible, ſo the Magiſtrates have made an Order of Police, that the Houſes ſhould be built at a Diſtance from each other.

In moſt Countries where this Wood is in Plenty, it is preferred to all the Kinds of Fir, for every Purpoſe; and in many Places there are Ships built of this Wood, which they ſay are durable; therefore this may be a very proper Tree for planting on ſome of the cold barren Hills in many Parts of *England*, which at preſent produce nothing to their Proprietors, and in one Age may be large Eſtates to their Poſterity and a national Advantage; which might be effected without a great Expence, where the Buſineſs is properly conducted.

The beſt Method for doing this, would be by making ſmall Nurſeries on or near the Place where the Plantation is intended to be made, in thoſe Nurſeries the Seeds ſhould be ſown; and if there are any poor Cottagers there, theſe may be employed in raiſing the Plants, keeping them clean, and afterward in tranſplanting them. This will leſſen the Number of indigent Poor, and by employing them in this Sort of Huſbandry, they may be brought to have a Love and Regard for Trees of their own planting, ſo will not be tempted to deſtroy them themſelves, or ſuffer others to do it; and as the Seaſon for planting happens at a Time of Year, when the Farmers have little Employment for their Labourers, the finding them uſeful Employment this Way, will be infinitely more Advantageous than giving them Alms from the Pariſh; and the Children may be taught to weed and keep the young Plants clean in Summer, whereby they may be rendered uſeful, and kept from being burdenſome to the Pariſhes.

From the Larch Tree is extracted the *Venice* Turpentine, which the Inhabitants of the Valley of *St. Martin* near *Lucern*, make a conſiderable Merchandize of. They collect this by boring Holes in the Trunk of the Trees, at about 2 or 3 Feet from the Ground, into which they fix narrow Troughs about 20 Inches long; the Ends of theſe are hollowed like a Ladle, and in the Middle is a ſmall Hole bored for the Turpentine to run into a Receiver, which is placed below it; as the Turpentine runs from the Trees, it paſſes along the ſloping Gutter or Trough to the Ladle, and from thence runs through the Hole into the Receiver. The People who gather this viſit the Trees Morning and Evening, from the End of *May* to *September*, to collect the Turpentine from out of the Receivers.

The 3d Sort is the Cedar of *Libanus*, which is a Tree of great Antiquity; and what is remarkable, this Tree is not found as a Native in any other Part of the World, ſo far as hath come to our Knowledge.

The Cones of this Tree are frequently brought from the *Levant*, which, if preſerved entire, will preſerve their Seeds good for ſeveral Years. The Time of their ripening is commonly in the Spring, and ſo conſequently are near one Year old before we receive them; for which they are not the worſe, but rather the better, the Cones having diſcharged a great Part of their Reſin by lying, and the Seeds are much eaſier to get out of them than ſuch as are freſh taken from the Tree.

The beſt Way to get the Seeds out is, to ſplit the Cones, by driving a ſharp Piece of Iron through the Center Lengthways, which will ſplit the Cone; then you may pull the Seeds out with your Fingers, which you will find are faſtened to a thin leafy Subſtance called Wings, as are thoſe of the Firr Tree: But before the Seeds are taken out, it will be proper to put the Cones in Water for 24 Hours, which will render them eaſier to ſplit, ſo that the Seeds may be taken out with greater Safety; for there will require Care in the doing it, otherwiſe many of the Seeds will be ſpoiled, for they are very tender, and will bruiſe where there is any Force employed to get them out.

Theſe Seeds ſhould be ſown in Boxes or Pots of light freſh Earth, and treated as was directed for the Firr (to which I refer the Reader) but only ſhall obſerve, that theſe require more Shade in Summer than the Firrs, and ſhould be frequently refreſhed with Water.

When the Plants come up, they muſt be guarded from the Birds, otherwiſe they will pick off their Tops; they muſt alſo be conſtantly kept clean from Weeds, and not placed under the Drip of Trees. The Plants may remain in theſe Boxes or Pots in which they were ſown till the following Spring, but it will be proper to place them under a Frame in Winter, or cover them with Mats, for while they are young they are in Danger of loſing their Tops, if they are pinched by Froſt. In the Spring before the Plants begin to ſhoot, they ſhould be carefully taken up and tranſplanted into Beds at about 4 Inches Diſtance, cloſing the Earth gently to their Roots; theſe Beds ſhould be arched over with Hoops, and covered with Mats in the Heat of the Day, to ſhade the Plants from the Sun till they have taken new Root; and if the Nights prove froſty, it will be proper to keep the Mats over them in the Night, but in cloudy or moiſt Weather they muſt be always open. After the Plants are well rooted, they will require no other Care but to keep them clean from Weeds, unleſs the Seaſon ſhould prove very dry, in which Caſe it will be proper to give them ſome Water once a Week; but it muſt be but in ſmall Quantities, for too much Wet is often very injurious to them, ſo that it will be better to ſcreen them from the Sun in hot Weather, to prevent the Earth from drying too faſt, or cover the Surface of the Ground with Moſs to keep it cool, than to water the Plants often.

In theſe Beds the Plants may ſtand 2 Years, then they ſhould be either tranſplanted to the Places where they are deſigned to remain, or to a Nurſery, where they may grow two Years more; but the younger theſe Plants are when they are planted out for good, the better the Trees will thrive, and the longer they will continue.

When theſe Plants begin to ſhoot ſtrong, you will generally find the leading Shoot incline to one Side; therefore, if you intend to have them ſtrait, you muſt ſupport them with Stakes, obſerving to keep the Leader always cloſe tied up, until you have gotten them to the Height you deſign them, otherwiſe their Branches will extend on every Side, and prevent their growing tall.

Theſe Trees are by many People kept in Pyramids, and ſheared as Yews, &c. in which Form they loſe their greateſt Beauty; for the Extenſion of the Branches is very ſingular in this Tree, the Ends of their Shoots, for the moſt Part declining, and thereby ſhewing their upper Surface, which is conſtantly clothed with green Leaves in ſo regular a Manner, as to appear at ſome Diſtance, like a green Carpet; and theſe waving about with the Wind, make one of the moſt agreeable Proſpects that can be to terminate a Viſta, eſpecially if planted on a riſing Ground.

It is Matter of Surprize to me, that this Tree hath not been more cultivated in *England* formerly, for till within a few Years paſt, there were but few here, ſince it would be a great Ornament to barren bleak Mountains, where few other Trees would grow, it being a Native of the coldeſt Parts of Mount *Libanus*, where the Snow continues moſt Part of the Year. And from the Obſervations I have made of thoſe now growing in *England*, I find they thrive beſt on the pooreſt Soil; for ſuch of them as have been planted in a ſtrong rich loamy Earth, have made but a poor Progreſs, in Compariſon to ſuch as have grown on a ſtony meagre Soil. And that theſe Trees are of quick Growth, is evident from 4 of them now growing in the Phyſick Garden at *Chelſea*, which (as I have been credibly informed) were planted there in the Year 1683, and at that Time were not above 3 Feet high; 2 of which Trees are at this Time (*viz.* 1757) upwards of 11 Feet and a Half in Girt, at 2 Feet above Ground, and their Branches extend more than 20 Feet on every Side their Trunks; which Branches (though they are produced 12 or 14 Feet above the Surface) do at every Termination hang very near the Ground, and thereby afford a goodly Shade in the hotteſt Seaſon of the Year.

The Soil in which theſe Trees are planted, is a lean hungry Sand, mixed with Gravel, the Surface of which is ſcarcely two Feet deep before a hard rocky Gravel appears. Theſe Trees ſtand at 4 Corners of a Pond, which is bricked up within 2 Feet of their Trunks, ſo that their Roots have no Room to ſpread on one Side, and conſequently are cramped in their Growth; but whether their ſtanding ſo near the Water may not have been advantageous to them, I cannot ſay, but ſure I am, if their Roots had had full Scope in the Ground, they would have made a greater Progreſs. I have alſo obſerved, that lopping or cutting theſe Trees is very injurious to them (more, perhaps, than to any other of the reſinous Trees) in retarding their Growth; for two of the four Trees above-mentioned, being unadviſedly planted near a Green-houſe, when they began to grow large, had their Branches lopped, to let the Rays of the Sun into the Houſe, whereby they have been ſo much checked, as at preſent to be little more than half the Size of the other two.

Theſe Trees have all of them produced, for ſeveral Years, large Quantities of Katkins (or male Flowers,) though there are but three of them which have as yet produced Cones; nor is it above 25 Years, that theſe have ripened their Cones, ſo as to perfect the Seed; but now the Seeds which fall out of the Cones produce Plants, which come up naturally without Care: And ſince we find, that they are ſo far naturalized to our Country as to produce ripe Seeds, we need not fear being ſoon ſupplied with enough, without depending on thoſe Cones which are brought from the *Levant*, as there are many Trees of this Kind in *England*, which in a few Years muſt certainly bear: But I find they are more ſubject to produce and ripen their Cones in hard Winters, than in mild ones; which is a plain Indication, that they will ſucceed, even in the coldeſt Parts of *Scotland*, where, as well as in *England*, they might be propagated to great Advantage.

What we find mentioned in Scripture of the *lofty Cedars*, can be no Ways applicable to the Stature of this Tree; ſince, from the Experience we have of thoſe now growing in *England*, as alſo from the Teſtimony of ſeveral Travellers, who have viſited thoſe few remaining Trees on Mount *Libanus*, they are not inclined to grow very lofty, but, on the contrary, extend their Branches very far; to which the Alluſion made by the *Pſalmiſt* agrees very well, when he is deſcribing the flouriſhing State of a People, and ſays, *They ſhall ſpread their Branches like the Cedar Tree.*

Rauwolf, in his Travels, ſays, there were not at that Time (*i. e. Anno* 1574) upon Mount *Libanus* more than 26 Trees remaining, 24 of which ſtood in a Circle; and the other two, which ſtood at a ſmall Diſtance, had their Branches almoſt conſumed with Age; nor could he find any younger Trees coming up to ſucceed them, though he looked about diligently for ſome. Theſe Trees (he ſays) were growing at the Foot of a ſmall Hill, on the Top of the Mountains, and amongſt the Snow. Theſe having very large Branches, commonly bend the Tree to one Side, but are extended to a great Length, and in ſo delicate and pleaſant Order, as if they were trimmed and made even with great Diligence, by which they are eaſily diſtinguiſhed at a great Diſtance from Fir Trees. The Leaves (continues he) are very like to thoſe of the Larch Tree, growing cloſe together in little Bunches, upon ſmall brown Shoots.

Maundrel, in his Travels, ſays, there were but ſixteen large Trees remaining, when he viſited the Mountains, ſome of which were of a prodigious Bulk, but that there were many more young Trees of a ſmaller Size; he meaſured one of the largeſt, and found it to be 12 Yards 6 Inches in Girt, and yet ſound, and 37 Yards in the Spread of its Boughs. At about five or ſix Yards from the Ground it was divided into five Limbs, each of which was equal to a great Tree. What *Maundrel* hath related, was confirmed to me by a worthy Gentleman of my Acquaintance, who was there in the Year 1720, with this Difference only, *viz.* in the Dimenſions of the Branches of the largeſt Tree, which he aſſured me he meaſured, and found to be twenty-two Yards Diameter. Now, whether Mr. *Maundrel* meant thirty-ſeven Yards in Circumference of the ſpreading Branches, or the Diameter of them, cannot be determined by his Expreſſions, yet neither of them well agrees with my Friend's Account.

Monſieur *Le Brun* reckons about 35 or 36 Trees remaining upon Mount *Libanus*, when he was there, and would perſuade us it was not eaſy to reckon their Numbers (as is reported of our *Stonehenge* on *Saliſbury Plain*). He alſo ſays, their Cones do ſome of them grow dependent. Which is abundantly confuted by the abovementioned Travellers, as alſo from our own Experience, for all the Cones grow upon the upper Part of the Branches, and ſtand erect, having a ſtrong woody central Style, by which it is firmly annexed to the Branch, ſo as with Difficulty to be taken off; which central Style remains upon the Branches after the Cone is fallen to Pieces, ſo that they never drop off whole, as the Pines do.

The Wood of this famous Tree is accounted Proof againſt all Putrefaction of animal Bodies; the Saw Duſt of it is thought to be one of the Secrets uſed by thoſe Mountebanks, who pretend to have the embalming Myſtery. This Wood is alſo ſaid to yield an Oil, which is famous for preſerving Books and Writings; and the Wood is thought by my Lord *Bacon*, to continue above a thouſand Years ſound. It is alſo recorded, that in the Temple of *Apollo* at *Utica*, there was found Timber of near two thouſand Years old. And the Statue of the Goddeſs, in the famous *Epheſian* Temple, was ſaid to be of this Material alſo, as was moſt of the Timber Work of that glorious Structure.

This Sort of Timber is very dry and ſubject to ſplit, nor does it well endure to be faſtened with Nails, from which it uſually ſhrinks, therefore Pins of the ſame Wood are much preferable.

LARKSPUR. *See* Delphinium.

LASERPITIUM. *Tourn. Inſt. R. H.* 324. *Tab.* 172. *Lin. Gen. Pl.* 306. Laſerwort.

The *Characters* are,

It hath an umbellated Flower, compoſed of many ſmall Umbels; both the ſmall and principal Umbels, have a many leaved Involucrum. The general Umbel is uniform, the Flowers have 5 *equal Petals, whoſe Points are Heart-ſhaped and inflexed; they have* 5 *Stamina which are as long as the Petals, terminated by ſingle Summits; the roundiſh Germen is ſituated under the Flower, ſupporting two thick acuminated Styles, crowned by obtuſe ſpreading Stigmas. The Germen afterward becomes an oblong Fruit with* 8 *longitudinal Wings or Membranes, reſembling the Fliers of a Water Mill; the Fruit divides into* 2 *Parts, each containing* 1 *Seed.*

The *Species* are,

1. LASERPITIUM *foliolis oblongo-cordatis, inciſo-ſerratis, umbellâ maximâ.* Laſerwort with oblong Heart-ſhaped Lobes, cut like a Saw, aud a very large Umbel. *Laſerpitium foliis latioribus lobatis. Mor. Umbel.* 29. Laſerwort with broader Leaves, having Lobes.

2. LASERPITIUM *foliolis cordatis inciſo-ſerratis. Hort. Cliff.* 96. Laſerwort with Heart-ſhaped Lobes cut like a Saw. *Laſerpitium foliis amplioribus, ſemine criſpo. Inſt. R. H.* 324. Laſerwort with large Leaves and curled Seeds.

3. LASERPITIUM *foliolis ovatis obtuſis acutè ſerratis.* Laſerwort with oval obtuſe Lobes, ſharply ſawed. *Laſerpitium humilius, paludapii folio, flore albo. Inſt. R. H.* Lower Laſerwort with a Smallage Leaf, and a white Flower.

4. LASERPITIUM *foliolis cuneiformibus furcatis. Lin. Sp. Pl.* 248. Laſerwort with Wedge-ſhaped forked Lobes. *Laſerpitium Gallicum.* 156. *C. B. P.* French Laſerwort.

5. LASERPITIUM *foliolis lanceolatis integerrimis ſeſſilibus. Hort. Cliff.* 96. Laſerwort with Spear-ſhaped entire Leaves, ſitting cloſe to the Branches. *Laſerpitium anguſtiſſimo & oblongo folio. Inſt. R. H.* 324. Laſerwort with a very narrow oblong Leaf.

6. LASERPITIUM *foliolis trifidis acutis.* Laſerwort with acute trifid Lobes. *Laſerpitium ſelinoides, ſemine criſpo. Inſt. R. H.* Laſerwort reſembling ſweet Smallage, with a curled Seed.

7. LASERPITIUM *foliolis trifidis obtuſis, umbellis partialibus contractis.* Laſerwort with obtuſe trifid Leaves, and the ſmall Umbels contracted. *Laſerpitium anguſtifolium, umbellâ contractâ & concavâ. Inſt. R. H.* Narrow-leaved Laſerwort, with a contracted and hollow Umbel.

8. LASERPITIUM *foliolis lanceolatis integerrimis extimis coalitis. Hort. Cliff.* 96. Laſerwort with entire Spear-ſhaped Lobes, whoſe outer ones coaleſce.

9. LASERPITIUM *foliolis pinnatifidis, caule anguloſo.* Laſerwort with Wing-pointed Lobes, and an angular Stalk. *Laſerpitium daucoides prutenicum viſcoſo ſemine. Breyn.*

Breyn. Cent. 167. Laſerwort like the wild Carrot, with a viſcous Seed.

There are ſome other Varieties, if not diſtinct Species of this Plant; there are ſome which have been put down as diſtinct Species, which differ only in the Colour of their Flowers, therefore ſhould not be regarded as ſuch, but the Number of Species has been greatly leſſened by ſome late Writers, who have erred as much in leſſening, as thoſe before them had done in multiplying the Species, which miſtake they may have fallen into by ſowing the Seeds near old Plants of the ſame Genus, or on Ground where ſome of theſe Sorts have grown, ſo that their Seeds have been ſcattered and buried in the Ground, where they will remain 2 or 3 Years, and afterward grow; ſo that unleſs their Seeds are ſown at a Diſtance from any of the other Species, there will commonly ſome other Species come up, whereby People have been often confuſed in diſtinguiſhing theſe Plants; nay I have frequently obſerved the Seeds of one Species fall, and the Plants come up on the Head of another Plant which grew near it, and this young Plant, if not timely rooted out has gotten the better of the old Plant, and deſtroyed it; therefore where there is not great Care taken to prevent this, the different Sorts cannot be preſerved in Gardens where the Species grow near each other.

Theſe Plants grow naturally in the South of *France*, in *Italy*, and *Germany*, and are preſerved in Botanick Gardens for Variety, but as they have no great Beauty, ſo are ſeldom cultivated in other Gardens; they require much Room, for their Roots extend far every Way, and the Leaves of many Sorts will ſpread 3 Feet, when the Plants are ſtrong; their Flower Stalks riſe 4 or 5 Feet high, and their Umbels of Flowers are very large; they have all of them perennial Roots but annual Stalks. They flower in *June*, and the Seeds ripen in *September*.

It is generally ſuppoſed, that the *Silphium* of the Antients was procured from one Species of this Genus, but from which of them we are at preſent ignorant. All the Species, if wounded, drop a very acrid Juice, which turns to a reſinous gummy Subſtance, very acrimonious. This was externally applied by the Antients to take away black and blue Spots that came by Bruiſes and Blows, as alſo to take away Excreſcences; it was alſo by ſome of the Ancients preſcribed in internal Medicines, but others have cautioned People not to make uſe of it this Way, from the Effects which they mention to have ſeen produced from the Violence of its Acrimony.

All theſe Plants are extreme hardy, ſo will thrive in moſt Soils and Situations; they are propagated by Seed, which if ſown in Autumn, will come up the following Spring, but when they are ſown in the Spring, the Seeds commonly remain in the Ground a whole Year. The Plants ſhould be tranſplanted the following Autumn, where they are deſigned to remain, for they ſend out long deep Roots, which are frequently broken by tranſplanting, if they are large; when the Plants are removed, they ſhould be planted 3 Feet aſunder, for they grow very large; they decay to the Ground every Autumn, and come up again the following Spring, but the Roots will continue many Years, and require no other Culture, but to clear them from Weeds, and to dig between the Roots every Spring.

LATHYRUS. *Tourn. Inſt. R. H.* 394. *Tab.* 216 217. *Lin. Gen. Pl.* 781. Chichling Vetch; in *French*, *Geſſe*.

The *Characters* are,

The Flower has a Bell-ſhaped Empalement of 1 *Leaf, cut into* 5 *Parts at the Top, the* 2 *upper being ſhort, and the under longer. The Flower is of the Butterfly Kind. The Standard is Heart-ſhaped, and large, and reflexed at the Point. The Wings are oblong and blunt; the Keel is half round, and the Size of the Wings. It hath* 10 *Stamina,* 9 *of them joined, and* 1 *ſeparate, crowned by roundiſh Summits. It hath an oblong, narrow, compreſſed Germen, ſupporting a riſing Stile, which is flat, and the upper Part broad, with an acute Point, crowned by a hairy Stigma. The Germen afterward becomes a long compreſſed Pod, ending in a Point, having* 2 *Valves, and filled with roundiſh Seeds.*

The *Species* are,

1. LATHYRUS *pedunculis unifloris, cirrhis diphyllis, leguminibus ovatis compreſſis dorſo bimarginatis. Hort. Cliff.* 367. Chichling Vetch with 1 Flower on a Foot Stalk, Tendrils having 2 Leaves, and oval compreſſed Pods with 2 Borders on their back Part. *Lathyrus annuus, flore cæruleo, Ochri ſiliquâ. H. L.* Annual Chichling Vetch with a blue Flower, and a Pod like *Ochrus*.

2. LATHYRUS *pedunculis unifloris, cirrhis diphyllis, leguminibus ovatis compreſſis, dorſo canaliculatis. Lin. Sp. Pl.* 730. Chichling Vetch with 1 Flower on a Foot Stalk, 2 leaved Tendrils, and an oval compreſſed Pod, a little channelled on the Back. *Lathyrus ſativus flore purpureo. C. B. P.* 344. Cultivated Chichling Vetch with a purple Flower.

3. LATHYRUS *pedunculis unifloris, cirrhis diphyllis, leguminibus teretibus.* Chichling Vetch with 1 Flower on a Foot Stalk, a two leaved Tendril, and a taper Pod. *Lathyrus foliis anguſtis, floribus ſingularibus coccineis. Seg. Pl. Veron.* Chichling Vetch with narrow Leaves, and ſingle ſcarlet Flowers.

4. LATHYRUS *pedunculis unifloris, cirrhis tetraphyllis, ſtipulis dentatis. Flor. Leyd. Prod.* 363. Chichling Vetch with 1 Flower on a Foot Stalk, a 4 leaved Tendril, and indented Stipulæ. *Clymenum Bithynicum ſiliquâ ſingulari, flore minore cæruleo, Boerh. Ind. alt.* 2. p. 43. *Bithynian* Chichling Vetch with a ſingle Pod, and a ſmall blue Flower.

5. LATHYRUS *pedunculis unifloris, cirrhis polyphyllis, ſtipulis lanceolatis. Hort. Cliff.* 368. Chichling Vetch with 1 Flower on a Foot Stalk, a many leaved Tendril, and Spear-ſhaped Stipulæ. *Clymenum Pariſienſe flore cæruleo. Tourn. Inſt. R. H.* 396. Chichling Vetch of *Paris* with a blue Flower.

6. LATHYRUS *pedunculis bifloris, cirrhis polyphyllis, foliolis alternis. Hort. Cliff.* 368. Chichling Vetch with 2 Flowers on a Foot Stalk, a many leaved Tendril, and the Lobes placed alternate. *Clymenum Hiſpanicum, flore vario ſiliquâ articulatâ. Tourn. Inſt. R. H.* 296. *Spaniſh* Chichling Vetch with a variable Flower, and jointed Pod.

7. LATHYRUS *pedunculis bifloris, cirrhis diphyllis, foliis ovato-oblongis, leguminibus hirſutis. Hort. Cliff.* 368.

Chichling Vetch with 2 Flowers on a Foot Stalk, a two leaved Tendril, oblong oval Leaves, and hairy Pods. *Lathyrus diſtoplatyphyllos hirſutus, mollis, magno & peramæno flore odore. Hort. Cath.* The ſweet ſcented Pea.

8. LATHYRUS *pedunculus bifloris, cirrhis diphyllis, foliolis lineari-lanceolatis, leguminibus hirſutis, ſeminibus ſcabris. Flor. Leyd. Prod.* 363. Chichling Vetch with 2 Flowers on a Foot Stalk, a two-leaved Tendril, narrow Spear-ſhaped Lobes, hairy Pods, and rough Seeds. *Lathyrus anguſtifolius ſiliquâ hirſutâ. C. P. P.* Narrow leaved Chichling Vetch with a hairy Pod.

9. LATHYRUS *pedunculis bifloris, cirrhis diphyllis, foliolis alternis lanceolatis. Flor. Leyd. Prod.* 263. Chichling Vetch with 2 Flowers on a Foot Stalk, a two-leaved Tendril, and Spear-ſhaped alternate Leaves. *Lathyrus tingitanus ſiliquis orobi flore amplo ruberrimo. Mor. Hiſt.* 2. 55. Chichling Vetch of *Tangier*, with a bitter Vetch Pod, and a large red Flower.

10. LATHYRUS *pedunculis bifloris, cirrhis diphyllis, foliolis lineari-lanceolatis internodiis membranaceis.* Chichling Vetch with 2 Flowers on a Foot Stalk, a two-leaved Tendril, narrow Spear-ſhaped Lobes, and membranaceous Wings between the Joints. *Lathyrus luteus latifolius. Bot. Monſp.* Yellow broad leaved Chichling Vetch.

11. LATHYRUS *pedunculis multifloris, cirrhis diphyllis, foliolis ovalibus internodiis nudis. Hort. Cliff.* 367. Chichling Vetch with many Flowers on a Foot Stalk, a two-leaved Tendril, oval Leaves, and naked between the Joints. *Lathyrus arvenſis repens tuberoſus. C. B. P.* 344. Creeping Field Chichling Vetch with a tuberous Root.

12. LATHYRUS *pedunculis multifloris, cirrhis diphyllis, foliolis lanceolatis, cirrhis ſimpliciſſimis. Hort. Cliff.* 367. Chichling Vetch with many Flowers on a Foot Stalk, a two leaved Tendril, Spear-ſhaped Leaves, and ſingle Tendrils. *Lathyrus luteus ſylveſtris dumetorum. J. B.* 2. p. 304. Yellow wild Chichling Vetch of the Woods.

3. LATHYRUS *pedunculis multifloris, cirrhis diphyllis tetraphylliſque, foliolis lanceolatis. It. W. Goth.* 75. Chichling Vetch with many Flowers on a Foot Stalk, a two leaved, and ſometimes four leaved Tendril, and Spear-ſhaped Leaves. *Lathyrus major Narbonenſis anguſtifolius J. B.* 2. 304. Greater Chichling Vetch of *Narbonne* with narrow Leaves.

14. LATHYRUS *pedunculis multifloris, cirrhis diphyllis, foliolis lanceolato-linearibus acuminatis, internodiis membranaceis* Chichling Vetch with many Flowers on a Foot Stalk, a two leaved Tendril, Spear-ſhaped narrow Leaves, ending in acute Points, and membranaceous between the Joints. *Lathyrus ſylveſtris major, flore minore, foliis longiùs mucronatis. Act. Phil. Lond.* n. 399. Greater wild Chichling Vetch with a ſmaller Flower, and longer pointed Leaves.

15. LATHYRUS *pedunculis multifloris, cirrhis diphyllis, foliolis lanceolatis, internodiis membranaceis. Hort. Cliff.* 367. Chichling Vetch with many Flowers on a Foot Stalk, a two leaved Tendril, Spear-ſhaped Leaves, and a membranaceous Stalk between the Joints. *Lathyrus latifolius. C. B. P.* 344. Broad leaved Chichling Vetch commonly called Everlaſting Pea.

16. LATHYRUS *pedunculis multifloris, cirrhis diphyllis, foliolis ovato-lanceolatis, internodiis membranaceis.* Chichling Vetch with many Flowers on a Foot Stalk, a two leaved Tendril, oval Spear-ſhaped Leaves, and a membranaceous Stalk between the Joints. *Lathyrus latifolius minor, flore majore. Boerh. Ind. alt.* 2. p. 42. Smaller broad leaved Chichling Vetch with a larger Flower, or large red flowering Everlaſting Pea.

17. LATHYRUS *pedunculis multifloris, cirrhis polyphyllis, ſtipulis ovatis, baſi acutis. Hort. Upſ.* 217. Chichling Vetch with many Flowers on a Foot Stalk, a many leaved Tendril, and oval Stipulæ acute at the Baſe.

18. LATHYRUS *pedunculis unifloris, foliis ſimplicibus, ſtipulis ſubulatis. Lin. Sp. Pl.* 729. Chichling Vetch with 1 Flower on a Foot Stalk, ſingle Leaves, and Awl-ſhaped Stipulæ. *Niſſolia vulgaris. Tourn. Inſt.* 656. Crimſon Graſs Vetch.

19. LATHYRUS *pedunculis unifloris calyce longioribus, cirrhis diphyllis ſimpliſſimis. Lin. Sp. Pl.* 729. Chichling Vetch with ſingle Flowers on a Foot Stalk, which are longer than the Empalement, and a two leaved ſingle Tendril.

20. LATHYRUS *pedunculis bifloris, foliis reniformibus ſimpliciſſimis ſubtus venoſis.* Chichling Vetch with 2 Flowers on a Foot Stalk, and Kidney-ſhaped ſingle Leaves veined on their under Side. *Niſſolia Americana procumbens, folio rotundo, flore luteo. Houſt. Mſſ.* Trailing *American Niſſolia* with a round Leaf, and a yellow Flower.

The 1ſt Sort grows naturally in *France*, *Spain*, and *Italy*; this is an annual Plant, with a climbing Stalk about 2 Feet high. The Leaves come out at each Joint alternate; they are compoſed of 2 long narrow Lobes, with a Tendril, or Claſper, riſing between, which faſtens to any Support near. The Flowers come ſingly on Foot Stalks at each Joint; they are blue, and ſhaped like thoſe of the Pea; theſe are ſucceeded by oval compreſſed Pods, with a double Membrane, or Wing, running longitudinally on the Back. This flowers in *June* and *July*, and the Seeds ripen in *September*. It is ſeldom cultivated, unleſs in Botanick Gardens for Variety.

The 2d Sort is cultivated in ſome Countries for the Seeds, which are uſed for feeding Poultry; this grows wild in *Italy* and *Spain*. It does not riſe ſo high as the firſt Sort. The Leaves are longer, the Pods are near twice the Length of thoſe, and are channelled on their back Side; this is cultivated in the ſame Manner as Vetches or Tares.

The 3d Sort was ſent me from *Verona*, where it grows naturally; this is an annual Plant, which ſeldom riſes more than 6 or 8 Inches high. The 2 Lobes of the Leaves are ſmall, and end with Claſpers. The Flowers are of a bright ſcarlet, and are ſucceeded by taper Pods, filled with roundiſh Seeds. This is only kept for Variety in ſome Botanick Gardens.

The 4th Sort grows naturally in *Bavaria*; this is alſo an annual Plant. The Stalk riſes from 2 to 3 Feet high, garniſhed with Leaves at each Joint, which are compoſed of 4 oval Lobes, ending with Claſpers. At the Baſe of the Foot Stalk are two ſmall Appendages (called Stipulæ) ſharply indented on their Edges. The Flowers are ſmall, blue, and ſit cloſe to the Stalk, ſtanding ſingly; theſe are ſucceeded by compreſſed Pods, an Inch long, containing 3 or 4 roundiſh Seeds. It flowers in *June*, and the Seeds ripen in *Auguſt*; this is kept for Variety in Botanick Gardens.

The 5th Sort grows naturally about *Paris*; this is an annual Plant with a ſlender Stalk, about 2 Feet high, garniſhed with Leaves compoſed of ſeveral narrow Lobes placed alternate along the Mid-rib, which ends in Claſpers. The Flowers come out ſingly on pretty long Foot Stalks; they are blue, and about the Size of thoſe of the common Tare. It grows naturally in ſome Parts of *England*, particularly on *Windſor* Foreſt, in moiſt Meadows, and has often a variable Flower.

The 6th Sort grows naturally in *Spain* and *Italy*; it is an annual Plant, with a climbing Stalk, which riſes 3 Feet high, garniſhed with Leaves, compoſed of ſeveral Lobes, which are Spear-ſhaped, placed alternately along the Midrib, which is terminated by very long Claſpers. The Foot Stalks of the Flowers are 5 or 6 Inches long, upon which ſtand 2 Flowers one above the other, ſhaped like thoſe of the Pea. The Standard, which is large, is of a bright red Colour, but the Keel and Wings are white. The Flowers are ſucceeded by pretty long jointed Pods, filled with roundiſh Seeds, This flowers in *June* and *July*, and the Seeds ripen in Autumn.

The 7th Sort is commonly known by the Title of Sweet Pea; this grows naturally in *Ceylon*, but is hardy enough to thrive in the open Air in *England*. It is an annual Plant with a climbing Stalk, which riſes from 3 to 4 Feet high, garniſhed with Leaves, compoſed of 2 large oval Lobes, whoſe Mid-rib is terminated by long Claſpers. The Foot Stalks come out at the Joints; they are about 6 Inches long, and ſuſtain 2 large Flowers, with dark purple Standards, and the Keel and Wings of a light blue Colour. The Flowers have a ſtrong ſweet Odour, and are ſucceeded by oblong inflated Pods, which are hairy, containing 4 or 5 roundiſh Seeds in each.

There are 2 other Varieties of this Sort, 1 of which has a Pink-coloured Standard with a white Keel, and the Wings of a pale bluſh Colour; this is commonly called Painted Lady Pea. The Flowers of the other are all white, which are the only Differences between them.

The 8th Sort grows naturally in *Eſſex*. I have found it in Places, which were ſpread over with Brambles, near *Hockerel*; this hath a perennial Root, ſending out 3 or 4 weak Stalks, near 2 Feet long, garniſhed with Leaves compoſed of 2 oblong Lobes, whoſe Midrib is terminated by Claſpers. The Foot Stalks are about 4 Inches long, and ſuſtain 2 purple Flowers, ſucceeded by rough hairy Pods, little more than 1 Inch long, containing 3 or 4 roundiſh Seeds. This Sort is very rarely preſerved in Gardens.

The 9th Sort was originally brought from *Tangier* to *England*; this is an annual Plant, whoſe Stalk riſes 4 or 5 Feet high, garniſhed with Leaves, compoſed of 2 oval veined Lobes, whoſe Mib-rib ends with Claſpers. The Foot Stalks are ſhort, and ſuſtain 2 large Flowers with purple Standards, whoſe Wings and Keel are of a bright red; theſe are ſucceeded by long jointed Pods, containing ſeveral roundiſh Seeds. This is ſometimes titled by the Gardeners Scarlet Lupine.

The 10th Sort is an annual Plant, which grows naturally about *Montpelier*, and I have alſo received the Seeds from *Siberia*; this riſes with a climbing Stalk, 5 or 6 Feet high, which has two Membranes, or Wings, running along from Joint to Joint. The Leaves are compoſed of 2 long narrow Lobes, whoſe Mid-ribs end with Claſpers. The Flowers ſtand on long Foot Stalks, each ſuſtaining 2 pale yellow Flowers, which are ſucceeded by long taper Pods, containing ſeveral roundiſh Seeds.

The 11th Sort grows naturally among the Corn in the South of *France*, and in *Italy*, but is cultivated in the *Dutch* Gardens, for the Roots, which are there ſold in the Markets, and are commonly eaten; this hath an irregular tuberous Root, about as big as that of the Pignut, covered with a brown Skin; theſe ſhoot up ſeveral weak trailing Stalks, garniſhed with Leaves compoſed of 2 oval Lobes, ending with Claſpers. The Foot Stalks of the Flowers are weak, about 3 Inches long, each ſuſtaining 2 deep red Flowers, which are ſeldom ſucceeded by Pods, but the Roots increaſe plentifully in the Ground. This Sort will grow in moſt Soils, but will thrive beſt on light Ground.

The 12th Sort grows naturally on the Banks and under Thickets, in moſt Parts of *England*; this hath a perennial creeping Root, whereby it propagates ſo faſt as to be a very troubleſome Weed, ſo ſhould not be admitted into Gardens.

The 13th Sort grows naturally by the Side of Hedges, and in Thickets, in ſeveral Parts of *England*; this hath a perennial creeping Root, which ſends out many climbing Stalks, which riſe 5 or 6 Feet high; theſe are garniſhed with Leaves, which have ſometimes 2, and at others 4 long narrow Lobes, and are terminated by Claſpers. The Foot Stalks ſuſtain ſeveral ſmall Flowers with pale Standards and blue Wings and Keels; theſe are ſucceeded by long taper Pods, containing ſeveral roundiſh Seeds. It flowers in *June* and *July*, and the Seeds ripen in Autumn.

The 14th Sort I found growing naturally in a Thicket near *Wimbleton*, in *Surry*, the Seeds of which I brought to the *Chelſea* Garden, where the Plants have flouriſhed many Years, and continued their Difference without Variation. The Stalks of this Sort riſe 6 or 7 Feet high, and have a Membrane running along on each Side between the Joints. The Leaves are compoſed of 2 narrow Spear-ſhaped Lobes, with long acute Points. The Foot Stalks are very long, and ſuſtain ſeveral ſmall Pea Bloſſom Flowers, with pale purple Standards, and the Keel and Wings of a deep blue Colour; theſe are ſucceeded by long taper Pods, like thoſe of the former Sort.

The 15th Sort has been found growing naturally in ſome Parts of *England*, but is frequently cultivated in Gardens for Ornament; this hath a perennial Root, from which ariſe ſeveral thick climbing Stalks, from 6 to 8 Feet high, which have membranaceous Wings on each Side, between the Joints. The Leaves are compoſed of 2 Spear-ſhaped Lobes, and the Mid-rib is terminated by Claſpers. The Foot Stalks are 8 or 9 Inches long, and ſuſtain ſeveral large red Flowers, which are ſucceeded by long taper Pods, containing ſeveral roundiſh Seeds. It flowers in *June*, *July*, and *Auguſt*, and the Seeds ripen in Autumn, ſoon after which the Stalks die to the Root, and new ones ariſe in the Spring, from whence it is called everlaſting Pea.

The 16th Sort differs from the laſt in the Stalks, being much ſhorter and ſtronger. The Leaves are broader, and of a deeper green. The Flowers are larger, and of a brighter red Colour, ſo make a much better Appearance; theſe Differences are laſting from Seeds, for I have raiſed many Plants from Seeds within 30 Years paſt, and have always found them to be the ſame as the Parent Plant.

The 17th Sort grows naturally in *Siberia*; this hath a perennial Root, and an annual Stalk, which is garniſhed with Leaves, compoſed of 6 or 8 Pair of oblong acute Lobes. The Flowers are blue, and many of them ſtand on each Foot Stalk; theſe are ſucceeded by Pods, ſhaped like thoſe of the Pea. It flowers in *July*, and the Seeds ripen in Autumn.

The 18th Sort grows naturally in moiſt Meadows in many Parts of *England*; this riſes with an upright Stalk, 1 Foot high, garniſhed with long narrow ſingle Leaves at each Joint. The Foot Stalks come out from the Joints toward the upper Part of the Stalk; they are ſlender, about 3 Inches long, ſome having but one, and others 2 bright red Flowers on their Tops. It flowers in *May* and *June*, and the Seeds ripen in Autumn. This is rarely kept in Gardens.

The 19th Sort grows naturally in *Syria*; this is an annual Plant, with a trailing Stalk, garniſhed with Leaves, compoſed of 2 Lobes, whoſe Mid-rib is terminated by a ſingle Tendril. The Foot Stalk ſupports 1 Flower of a pale purple Colour, and when the Flowers decay, the Germen is thruſt into the Ground, where the Pods are formed, and the Seeds ripen.

The 20th Sort was diſcovered by the late Dr. *Houſtoun*, growing naturally at *La Vera Cruz*; this is an annual Plant with a trailing Stalk, a Foot long, garniſhed with a ſingle Kidney-ſhaped Leaf at each Joint. The Flowers grow 2 together on very ſhort Foot Stalks; they are ſmall, and of a deep yellow Colour; theſe are ſucceeded by ſhort taper Pods including 3 or 4 ſmall roundiſh Seeds.

This Sort is tender, ſo the Seeds ſhould be ſown on a hot Bed in the Spring, and when the Plants are fit to remove, they ſhould be each planted into a ſmall Pot filled with light Earth, and plunged into a Tan Bed, where they ſhould conſtantly remain, treating them as other tender Plants from warm Countries; if they are brought forward in the Spring; they will flower in *July*, and their Seeds will ripen in Autumn.

The other Sorts are preſerved in ſome curious Gardens for the Variety of their Flowers. Theſe may all of them be propagated by ſowing their Seeds, either in Spring or Autumn, but thoſe which are ſowed in Autumn ſhould have a light Soil, and a warm Situation, where the Plants will abide the Winter, and come to flower early the following Spring, and their Seeds will ripen in *July*; but thoſe which are ſown in the Spring ſhould have an open Expoſure, and may be planted on almoſt any Soil, for they are not very tender Plants, nor do they require much Culture; theſe Sorts ſhould all of them be ſown where they are deſigned to remain, for they ſeldom ſucceed, when they are tranſplanted; ſo that where they are ſown for Ornament, there ſhould be 6 or 8 Seeds ſown in a ſmall Patch, in different Parts of the Borders of the Flower Garden, and when the Plants come up, they ſhould be carefully kept clear from Weeds, but when they are grown 2 or 3 Inches high, there ſhould be ſome Sticks put down by them to ſupport them, otherwiſe they will trail on the Ground, and become unſightly, beſides, they will trail on whatever Plants grow near them.

LATIFOLIOUS Trees and Plants are ſuch as have broad Leaves.

LAVANDULA. *Tourn. Inſt. R. H.* 198. *Tab.* 93. *Lin. Gen. Pl.* 630. Lavender; in *French*, *Lavande*.

The *Characters* are,

The Flower hath an oval permanent Empalement of 1 *Leaf, obſcurely indented at the Brim. The Flower is of the Lip Kind, with* 1 *Petal, having a cylindrical Tube longer than the Empalement, but ſpreading above; the upper Lip is large, bifid, and open; the under Lip is cut into* 3 *equal Segments. It hath* 4 *ſhort Stamina ſituated within the Tube of the Petal,* 2 *being ſhorter than the other, and terminated by ſmall Summits. It hath a Germen divided in* 4 *Parts, ſupporting a ſlender Style the Length of the Tube, crowned by an obtuſe indented Stigma. The Germen turns to* 4 *oval Seeds, ſitting in the Empalement.*

The *Species* are,

1. Lavandula *foliis lanceolatis integris, ſpicis nudis. Hort. Cliff.* 303. Lavender with entire Spear-ſhaped Leaves and naked Spikes. *Lavandula latifolia. C. B. P.* 216. Broad leaved Lavender.

2. Lavandula *foliis lanceolato-linearibus, ſpicis nudis.* Lavender with Spear-ſhaped narrow Leaves, and naked Spikes. *Lavandula anguſtifolia. C. B. P.* 216. Narrow leaved Lavender.

3. Lavandula *foliis duplicato-pinnatifidis. Vir. Cliff.* 56. Lavender with Leaves doubly Wing-pointed. *Lavandula folio diſſecto. C. B. P.* 216. Lavender with a cut Leaf.

4. Lavandula *foliis duplicato-pinnatifidis hirſutis, ſpicis faſciculatis.* Lavender with doubly Wing-pointed hairy Leaves, and Spikes of Flowers growing in Cluſters. *Lavandula folio longiore tenuius & elegantius diſſecto. Tourn. Inſt. R. H.* 198. Lavender, with a longer narrower, and more elegant cut Leaf.

The 1ſt Sort is cultivated in ſeveral of the *Engliſh* Gardens, and has been generally known by the Title of Spike, or Lavender Spike; the Leaves of this Sort are much ſhorter and broader than thoſe of the common Lavender, and the Branches are ſhorter, more compact, and fuller of Leaves. This Sort doth not often produce Flowers, but when it does, the Flower Stalks are garniſhed with Leaves very different from thoſe on the other Branches, approaching nearer to thoſe of the common Sort, but are broader; the Stalks grow taller, the Spikes of Flowers are larger, the Flowers ſmaller, and in looſer Spikes. It generally flowers a little later in the Seaſon This has been frequently confounded with the common Lavender, and has been ſuppoſed the ſame Species, but is undoubtedly a different Plant.

This I believe to be the ſame with what Dr. *Moriſon* calls *Lavandula latifolia ſterilis*, for the Plants will continue ſeveral Years without producing Flowers; during which Time they have a very different Appearance, as thoſe Branches of the ſame Plant always have which do not flower; but I have planted Slips taken from thoſe flowering Branches with narrow Leaves, and others from thoſe with the broad Leaves, but have always found the Plants ſo propagated to return to their original Sort, the Cuttings with the narrow Leaves have become broad again.

The 2d Sort is the common Lavender, ſo well known as to require no Deſcription. Both theſe Sorts flower in *July*, at which Time the Spikes of the ſecond Sort are gathered for Uſe; there is a Variety of this with white Flowers.

Theſe are propagated by Cuttings or Slips, the beſt Seaſon for which is in *March*, when you ſhould plant them in a ſhady Situation, or at leaſt ſhade them with Mats until they have taken Root; after which they may be expoſed to the Sun, and when they have obtained Strength, may be removed to the Places where they are deſigned to remain. Theſe Plants will abide the longeſt in a dry, gravelly, or ſtony Soil, in which they will endure our ſevereſt Winters; though they will grow much faſter in the Summer, if they are planted on a rich light moiſt Soil, but then they are generally deſtroyed in Winter, nor are the Plants half ſo ſtrong ſcented, or fit for medicinal Uſes, as thoſe which grow upon the moſt barren rocky Soil.

Theſe Plants were formerly in Uſe to make Edgings to Borders in Gardens, for which Purpoſe they are by no Means proper, for they will grow too large for ſuch Deſigns; and if they are often cut in very dry Weather, they are ſubject to decay; and in hard Winters they are very often killed, ſo that the Edging will not be complete: Beſides, theſe Plants greatly exhauſt the Goodneſs of the Soil, whereby the Plants in the Borders will be deprived of their Nouriſhment; ſo that they ſhould never be planted in a fine Garden among other choice Plants and Flowers, but rather be placed in Beds in the Phyſick Garden, or in any Part of the Kitchen Garden, if the Soil is dry.

The 3d Sort grows naturally in *Andaluſia*; this is an annual Plant, which riſes with an upright branching Stalk near 3 Feet high; the Stalks are woolly, and garniſhed with hoary Leaves growing oppoſite, which are cut into many Diviſions to the Mib-rib; theſe Segments are again divided on their Borders toward the Top, into 3 obtuſe Segments, ſo that the end in many Points. The Foot Stalk of the Flower is continued from the End of the Branches, which is naked, and about 6 Inches long, having 4 Corners or Angles, and is terminated by a cloſe Spike of Flowers about 1 Inch long; the Spike has the Rows of Flowers twiſted ſpirally: Under this Spike there are commonly 2 ſmall ones proceeding from the Side of the Stalk, at about an Inch Diſtance from the middle Spike. This Sort flowers in *July*, and the Seeds ripen in Autumn. There are two Varieties of this, one with blue, and the other with white Flowers.

This Sort is ſown every Spring on Borders or Beds of light freſh Earth, and when the Plants come up, they may be tranſplanted into other Borders of the Flower Garden, or into Pots, to remain for good; where they will require no farther Care, but to keep them clean from Weeds. Theſe are pretty Plants to place in large Borders, among others, for Variety, but they are never uſed with us; they may alſo be preſerved in the Winter, if placed in a Green-houſe in Autumn; but they never continue longer than two Years with us, and many Times (if they have produced Seeds the firſt Year) they will not continue ſo long. Nor do thoſe Plants which are thus preſerved, appear handſome the following Summer, ſo that, unleſs in bad Seaſons, when the Seeds do not ripen in the open Air, it is not worth while to preſerve the Plants. If the Seeds of this Sort are permitted to ſcatter, the Plants will come up the following Spring without Care, and may be treated in the Manner before directed.

The 4th Sort grows naturally in the *Canary Iſlands*, from whence the Seeds were ſent to the Biſhop of *London*, which were ſown in his Lordſhip's Garden at *Fulham*, where this Plant was firſt raiſed. This riſes with an upright branching ſquare Stalk 4 Feet high, garniſhed with Leaves which are longer, and cut into narrower Segments than thoſe of the third Sort. They are of a lighter green and hairy, the naked Flower Stalk is alſo longer, and terminated with a Cluſter of Spikes of blue Flowers, and at 2 or 3 Inches below theſe, are 2 ſmall Spikes of Flowers, ſtanding one on each Side the Stalk. The Flowers are ſmaller than thoſe of the common Lavender, but are of the ſame Shape.

This Sort is tenderer than either of the former, ſo the Seeds of this muſt be ſown on a moderate hot Bed in the Spring; and when the Plants come up, they ſhould be each planted into a ſeparate ſmall Pot filled with light Earth, and plunged into another hot Bed, to bring the Plants forward; and in the Beginning of *June*, they ſhould be inur'd to the open Air, where they ſhould be placed in a ſheltered Situation toward the End of that Month; in *July* the Plants will flower, and if the Autumn proves warm, the Seeds will ripen in *September*; but when they do not perfect Seeds, the Plants may be preſerved through the Winter in a good Green-houſe, where they will produce Flowers moſt Part of that Seaſon, whereby good Seeds may be obtained.

LAVATERA. *Tourn. Act. Gal.* 1706. *Tab.* 3. *Dill. Gen.* 10. *Lin. Gen. Pl.* 752.

The *Characters* are,

The Flower has a double Empalement; the outer is of one Leaf, ſhort, obtuſe, and trifid; the inner is of 1 *Leaf, and quinqueſid; they are both permanent. The Flower hath* 5 *Petals, which are joined at their Baſe, plain, and ſpread open above. It has many Stamina, joined in a Column below, but above are looſe; they are inſerted in the Petal, and terminated by Kidney-ſhaped Summits. It has an orbicular Germen, ſupporting a ſhort cylindrical Style, crowned by many briſtly Stigmas. The Empalement becomes a Fruit with ſeveral Capſules, covered in Front by a hollow Shield, each Capſule having* 1 *Kidney-ſhaped Seed.*

The *Species* are,

1. LAVATERA *foliis infimis cordato-orbiculatis, caulinis trilobis acuminatis glabris, pedunculis unifloris, caule herbaceo.* *Lavatera* whoſe lower Leaves are orbicularly Heart-ſhaped, thoſe on the Stalks ſet with 3 acute Lobes, and ſmooth, 1 Flower on a Foot Stalk, and an herbaceous Stalk. *Lavatera folio & facie althææ. Act. R. P.* 1706. *Lavatera* with the Leaf and Appearance of Marſhmallow.

2. LAVATERA *foliis infimis cordato-angulatis, ſupernè ſagittatis, pedunculis unifloris caule herbaceo hirſuto.* *Lavatera* with the lower Leaves, angularly Heart-ſhaped,

the upper ones Arrow-pointed, a ſingle Flower on each Foot Stalk, and a hairy herbaceous Stalk. *Lavatera Africana, flore pulcherrimo. Boerh. Ind. alt. African Lavatera* with a beautiful Flower.

3. LAVATERA *foliis glabris, caule ſcabro herbaceo, pedunculis unifloris, fructibus orbiculo tectis. Hort. Up.* 203. *Lavatera* with ſmooth Leaves, a rough herbaceous Stalk, 1 Flower on a Foot Stalk, and an orbicular cloſed Fruit. *Malva folio vario. C. B. P.* Mallow with a variable Leaf.

4. LAVATERA *caule herbaceo, fructibus denudatis, calycibus inciſis. Hort. Upſ.* 203. *Lavatera* with an herbaceous Stalk, naked Fruit, and a cut Empalement. *Althæa flore majore. C. B. P.* 316. Marſhmallow with a larger Flower.

5. LAVATERA *foliis quinquelobatis hirſutis, caule erecto fruticoſo. Icon. Tab.* 161. *Lavatera* with hairy Leaves having 5 Lobes, and a ſhrubby upright Stalk.

6. LAVATERA *caule arboreo, foliis ſeptemangularibus tomentoſis plicatis, pedunculis confertis unifloris axillaribus. Hort. Upſal.* 202. *Lavatera* with a Tree-like Stalk, woolly plaited Leaves, having 7 Angles, and Foot-Stalks with ſingle Flowers ariſing in Cluſters from the Wings of the Leaves. *Malva arborea veneta dicta, parvo flore. C. B. P.* 315. Tree Mallow with a ſmall Flower.

7. LAVATERA *caule fruticoſo, foliis ſubcordatis ſubtrilobis rotundatis crenatis ſtipulis cordatis, pedunculis unifloris. Lin. Sp. Pl.* 691. *Lavatera* with a ſhrubby Stalk, Heart-ſhaped Leaves having 3 round indented Lobes, which are crenated, Heart-ſhaped Stipulæ, and Foot Stalks with ſingle Flowers. *Althæa fruteſcens, folio rotundiore incano. C. B. P.* 316. Shrubby Marſhmallow with a rounder hoary Leaf.

8. LAVATERA *caule fruticoſo, foliis quinquelobo-haſtatis. Hort. Upſ.* 202. *Lavatera* with a ſhrubby Stalk, and Leaves having 5 Arrow-pointed Lobes. *Althæa fruteſcens, folio acuto, parvo flore. C. B. P.* 316. Shrubby Marſhmallow with an acute Leaf, and a ſmall Flower.

9. LAVATERA *caule fruticoſo, foliis orbiculatis crenatis tomentoſis, pedunculis confertis unifloris axillaribus. Lavatera* with a ſhrubby Stalk, round, crenated, woolly Leaves, and Foot Stalks growing in Cluſters at the Wings of the Stalk, and each ſuſtaining a ſingle Flower. *Althæa fruteſcens Hiſpanica folio rotundiori. Tourn. Inſt. R. H.* 97. *Spaniſh* ſhrubby Marſhmallow with a rounder Leaf.

10. LAVATERA *caule fruticoſo tomentoſo, foliis orbiculato-cordatis undatis incanis, ſerrato-crenatis, pedunculis ſæpius trifloris. Lavatera* with a ſhrubby woolly Stalk, round Heart-ſhaped hoary Leaves, waved, and ſharply indented, and Foot Stalks which have frequently 3 Flowers. *Althæa fruteſcens Luſitanica, folio rotundiori undulato. Tourn. Inſt.* 97. *Portugal* ſhrubby Marſhmallow with a rounder waved Leaf.

11. LAVATERA *caule fruticoſo, foliis quinquelobatis acutis crenatis tomentoſis, racemis terminalibus. Lavatera* with a ſhrubby Stalk, woolly Leaves having 5 acute Lobes, and long Bunches of Flowers terminating the Stalks. *Althæa fruteſcens, folio bryoniæ. C. B. P.* 316. Shrubby *Althæa* with a Briony Leaf.

The 1ſt Sort grows naturally in *Syria*; it is an annual Plant, with an erect, branching, herbaceous Stalk, riſing 2 Feet high; the under Leaves are orbicularly Heart-ſhaped, ſmooth, and ſtand on long Foot Stalks, the upper are divided into 3 acute Lobes; the Flowers come out on long Foot Stalks from the Wings of the Leaves, they are very large, and ſpread open like thoſe of the Marſhmallow, and are of a pale red or Roſe Colour. Theſe come out in *July*, the Seeds ripen in *September*, and the Plants decay in Autumn.

There is a Variety of this with white Flowers, which has accidentally riſen from Seeds.

The 2d Sort grows naturally at the *Cape of Good Hope*, from whence the Seeds were brought to *Holland*, and the Plants there cultivated, and the Seeds have ſince been communicated to moſt Parts of *Europe*. This differs from the firſt in the Shape of the Leaves, the lower having Angles, and the upper being Arrow-pointed; the Stalks are hairy, the Flowers larger, and of a brighter red Colour.

This Sort is annual, and flowers at the ſame Time with the former, and the Seeds are ripe in Autumn.

The 3d Sort grows naturally in *Spain* and *Sicily*; this is an annual Plant, which riſes with ſlender herbaceous Stalks about 2 Feet high, covered with a brown Bark; the lower Leaves are roundiſh, and the upper are angular, and ſome are Arrow-pointed. The Flowers are not half ſo large as thoſe of either of the former, and are of a pale red Colour; theſe ſtand on ſhort Foot Stalks, and appear about the ſame Time with the former. This is certainly a diſtinct Species, for I cultivated it more than 30 Years, and never found it vary.

The 4th Sort hath a perennial Root and an annual Stalk, which riſes 4 or 5 Feet high and is woolly, garniſhed with angular Heart-ſhaped Leaves, ſtanding on long Foot Stalks. The Flowers come out from the Wings of the Stalk toward the Top, ſitting cloſe to the Stalks at every Joint; they are of a purpliſh Colour, and ſhaped like thoſe of the Marſhmallow, but larger. Theſe appear in *July* and *Auguſt*, and the Seeds ripen in Autumn, then the Stalks decay to the Root. It grows naturally in *Auſtria* and *Bohemia*.

The 5th Sort grows naturally at the *Cape of Good Hope*, the Seeds of it were ſent me by the ingenious Mr. *Storm*, Gardener at *Amſterdam*. This riſes with a ſhrubby branching Stalk 8 or 10 Feet high, garniſhed with large hairy Leaves, deeply divided into 5 roundiſh Lobes, indented on their Edges, and of a bright green, ſtanding alternately on long Foot Stalks; as the Plants become more ſhrubby, the Leaves decreaſe in Size, ſo that the upper Leaves are not more than a ſixth Part of the Bigneſs of the firſt or lower Leaves. The Flowers come out ſingly at the Wings of the Leaves at every Joint, ſo that as the Branches extend there is a Succeſſion of Flowers, whereby the Plants are ſeldom deſtitute of Flowers the whole Year. The Flowers are of a bright purple Colour, but not very large; theſe are ſucceeded by Capſules having many Partitions, in each of theſe is 1 Kidney-ſhaped Seed, which ripen in Succeſſion as the Flowers are produced.

The 6th Sort is commonly called Mallow-Tree; this riſes with a very ſtrong thick Stalk, 8 or 10 Feet high, dividing into many Branches at the Top, garniſhed with ſoft woolly Leaves that are plaited, and the

Edges cut into ſeveral Angles. The Flowers are produced in Cluſters at the Wings of the Leaves, each ſtanding on a ſeparate Foot Stalk; they are of a purple Colour, and ſhaped like thoſe of the common Mallow, and are ſucceeded by Seeds of the ſame Form. This Sort flowers from *June* to *September*, and the Seeds are ripe in Autumn.

The 7th Sort riſes with a ſhrubby Stalk 7 or 8 Feet high, ſending out ſeveral long Branches, garniſhed with woolly Leaves, differing greatly in Size and Shape, the lower being partly Heart-ſhaped at their Baſe, but divided into 5 roundiſh Lobes; the upper, which are ſmall, have 3 Lobes indented on their Edges. The Flowers come out from the Wings of the Stalk, 3 or 4 at each Joint, upon very ſhort Foot Stalks; they are of a light purple Colour, and ſhaped like thoſe of the Marſhmallow. There is a Succeſſion of theſe Flowers from *June* to Autumn.

The 8th Sort is a Shrub which grows to the ſame Size as the 7th, and differs from it in the Shape of the Leaves, which are divided into 3 or 5 acute pointed Lobes, and the Flowers are ſmaller, but of the ſame Shape and Colour, and continues in Flower at the ſame Time. This grows naturally in the South of *France*.

The 9th Sort riſes with a ſhrubby Stalk 6 or 8 Feet high, ſending out many Branches, garniſhed with roundiſh crenated woolly Leaves, ſtanding on long Foot Stalks; the Foot Stalks of the Flowers come out in Cluſters from the Wings of the Leaves, each ſuſtaining 1 large pale blue Flower, of the ſame Shape with thoſe of the other Species. This flowers at the ſame time with them, and the Seeds ripen in Autumn.

The 10th Sort hath a ſoft ſhrubby woolly Stalk, which riſes 4 or 5 Feet high; theſe ſtand more erect than either of the former Sorts, and do not branch ſo much; the Leaves are Heart-ſhaped at their Baſe, but round on their Edges, very hoary and waved, ſtanding on long Foot Stalks. The Flowers come out in Cluſters from the Wings of the Leaves, ſtanding on Foot Stalks of different Lengths; theſe generally ſupport but 1 Flower, but ſometimes they have 2 or 3; the Flowers are large, and of a pale blue Colour. They appear at the ſame Time with the former, and their Seeds ripen in Autumn. It grows naturally in *Portugal*.

The 11th Sort riſes with a ſhrubby Stalk 6 or 7 Feet high, ſending out ſeveral ſhrubby Branches, garniſhed with woolly Leaves, divided into 5 Lobes which end in acute Points, and are crenated on their Edges; the lower Part of the Branches are adorned with a ſingle Flower at each Joint, ſitting cloſe to the Stalk, but the Branches are terminated by looſe Spikes of Flowers, of a pale blue Colour, ſhaped like thoſe of the former.

The ſix laſt mentioned Sorts, though they have ſhrubby Stalks, are but of ſhort Duration here; the 6th, 10th, and 11th Sorts, ſeldom continue longer than 2 Years, unleſs when they happen to grow on dry Rubbiſh, where they make but little Progreſs, and their Stalks and Branches are firmer, ſo better able to reſiſt the Cold; for when they are in good Ground, they are very vigorous and full of Sap, ſo are killed by the Froſt in common Winters. The other three Sorts are not quite ſo tender, nor of ſo ſhort Duration; theſe will continue 3 or 4 Years, and ſometimes longer, provided the Winters are not very ſevere; or if the Plants ſtand in a warm Situation and on a dry Soil, but in moiſt rich Ground they ſeldom continue long.

All theſe ſhrubby Sorts are eaſily propagated by Seeds, which ſhould be ſown in the Spring, on a Bed of light Earth; and when the Plants are about 3 or 4 Inches high, they ſhould be tranſplanted to the Places where they are deſigned to remain; for as they ſhoot out long fleſhy Roots which have but few Fibres, they do not ſucceed well if tranſplanted after they are grown large. If the Seeds of theſe Plants are permitted to ſcatter on the Ground, the Plants will come up the following Spring; and when they happen to fall into dry Rubbiſh, and are permitted to grow therein, they will be ſhort, ſtrong, woody, and produce a greater Number of Flowers than thoſe Plants which are more luxuriant. As theſe Plants continue a long Time in flower, a few Plants of each Sort may be allowed a Place in all Gardens where there is Room.

The 3 firſt Sorts are annual Plants, which are propagated by Seeds: The Seaſon for ſowing them is in *March*, on a Bed of freſh light Earth; and when the Plants are come up, you muſt carefully clear them from Weeds; and in very dry Weather, they muſt be now and then refreſhed with Water. When they are about 2 Inches high, you muſt tranſplant them into the Places where they are deſigned to remain, which ſhould be in the Middle of the Borders in the Flower Garden; for, if the Soil be good, they will grow 2 or 3 Feet high; in tranſplanting them you muſt take them up very carefully, preſerving a Ball of Earth to their Roots, otherwiſe they are apt to miſcarry; and alſo water and ſhade them until they have taken Root, after which they will require no other Care but to clear them from Weeds, and to faſten them to Stakes, to prevent their being injured by ſtrong Winds. You may alſo ſow their Seeds in Autumn, and when the Plants are come up, tranſplant them into ſmall Pots, which, towards the End of *October*, ſhould be placed in a common hot Bed Frame, where the Plants being defended from ſevere Froſts, will abide the Winter very well; and in the Spring, you may ſhake them out of the Pots, and plant them into larger, or elſe into the full Ground, where they may remain to flower. The Plants thus managed will be larger, and flower ſtronger and earlier than thoſe ſown in the Spring, and from theſe you will conſtantly have good Seeds, whereas thoſe ſown in the Spring ſometimes miſcarry. The Seeds of the 3d Sort ſhould be ſown in the Spring, in the Place where they are to remain, for they do not well bear removing in the Summer.

The 2 firſt Sorts are very ornamental Plants in a fine Garden, when placed among other Annuals, either in Pots or Borders.

The 4th Sort hath a perennial Root which abides ſeveral Years, but the Stalks decay in the Autumn, and new ones ariſe in the Spring. This is propagated by Seeds, which ſhould be ſown on a Bed of light Earth in the Spring, and when the Plants are fit to remove they ſhould be either tranſplanted to the Places where they are to remain, or into Pots where they may ſtand to get more Strength, before they are planted in the full Ground. After the Plants are well rooted, they will require no other Care, but to keep them clear from Weeds; and if the Winter ſhould prove very ſevere, it will be proper to cover them with old Tanners Bark, to keep out the Froſt; but they will endure the Cold of our ordinary Winters very well, and will produce their Flowers and ripen their Seeds annually.

The 5th Sort will not live through the Winter in the open Air in *England*, ſo the Seeds ſhould be ſown in the ſame Manner as thoſe of the other Sorts; and when the Plants are fit to remove, they ſhould be each planted into a ſmall Pot filled with light Earth, and placed in the Shade till they have taken new Root; then they may be removed to a ſheltered Situation, and mixed with other hardy exotick Plants. As the Plants advance in their Growth, they will require larger Pots, and muſt be treated as other Plants; in Autumn they muſt be removed into the Green-houſe, and placed with Myrtles and other Kinds of Plants, which only require Protection from hard Froſt, but muſt have as much free Air as poſſible in mild Weather.

LAUREOLA. *See* Thymelæa..

LAUROCERASUS. *See* Padus.

LAURUS. *Tourn. Inſt. R. H.* 597. *Tab.* 367. *Lin. Gen. Pl.* 452. The Bay Tree; in *French*, Laurier.

The *Characters* are,

It is male and female in different Plants, the male Flowers have no Empalement. It hath 1 *Petal, cut into* 6 *Segments at the Top, and* 9 *Stamina ſhorter than the Petal, ſtanding by Threes, terminated by ſlender Summits. The female Flowers have no Empalement, they have* 1 *Petal, ſlightly cut into* 6 *Segments at the Top. In the Bottom is ſituated an oval Germen, ſupporting a ſingle Style the ſame Length with the Petal, crowned by an obtuſe Stigma; there are* 2 *globular Glands, ſtanding on very ſhort Foot Stalks, fixed to the Baſe of the Petal. The Germen becomes an oval Berry with* 1 *Cell, incloſing* 1 *Seed of the ſame Form.*

The *Species* are,

1. Laurus *foliis lanceolatis venoſis perennantibus, floribus quadrifidis diœciis. Hort. Cliff.* 105. Bay Tree with ever-green, Spear-ſhaped, veined Leaves, and Flowers cut into 4 Points, which are male and female. *Laurus latifolia Dioſcoridis. C. B. P.* The broad leaved Bay of *Dioſcorides.*

2. Laurus *foliis lanceolatis venoſis perennantibus marginibus undatis.* Bay Tree with ever-green Spear-ſhaped Leaves, veined and waved on their Edges. *Laurus vulgaris folio undulato. H. R. Par.* Common Bay Tree with waved Leaves.

3. Laurus *foliis lineari-lanceolatis venoſis perennantibus, floribus quinquefidis diœciis,* Bay Tree with narrow Spear-ſhaped Leaves which are ever-green and veined, and Flowers cut into 5 Points which are male and female. *Laurus tenuifolia. Tab. Icon.* 25. Narrow leaved Bay.

4. Laurus *foliis lanceolatis perennantibus venoſis planis, ramulis tuberculatis cicatricibus, floribus racemoſis. Hort. Cliff.* 154. Bay Tree with ever-green, veined, Spear-ſhaped, plain Leaves, Branches having Tubercles and Cicatrices, and Flowers growing in Bunches. *Laurus Indica. Ald. Hort. Farneſ.* 61. The *Indian* Bay.

5. Laurus *foliis lanceolatis perennantibus marginibus reflexis tranſverſè venoſis, floribus racemoſis.* Bay Tree with ever-green Spear-ſhaped Leaves, whoſe Borders are reflexed and tranſverſly veined, and Flowers growing in Bunches. *Laurus Carolinienſis, foliis acuminatis, baccis cæruleis, pediculis longis rubris inſidentibus. Cateſb. Carol.* 1. p. 63. *Carolina* Bay Tree with pointed Leaves, and blue Berries ſitting on long red Foot Stalks.

6. Laurus *foliis ovato-lanceolatis obtuſis integris annuis.* Bay Tree with oval, obtuſe, Spear-ſhaped, entire Leaves, which are annual. *Arbor Virginiana, citreæ vel limonii folio, Benzoinum fundens. Hort. Amſt.* 1. p. 189. The *Benjamin* Tree.

7. Laurus *foliis integris trilobiſque. Hort. Cliff.* 154. Bay Tree with entire Leaves, or having 3 Lobes. *Cornus mas odorata, folio trifido, margine plano, ſaſſaphras dicta. Pluk. Alm.* 120. The Saſſafras.

8. Laurus *foliis venoſis oblongis acuminatis annuis, ſubtus rugoſis.* Bay Tree with oblong, acute-pointed, veined, annual Leaves, rough on their under Side. *Laurus foliis lanceolatis enervibus annuis. Flor. Virg.* 159. Bay Tree with Spear-ſhaped, winged, unveined, annual Leaves.

9. Laurus *foliis trinervis lanceolato-ovatis, nervis ſupra baſin unitis. Lin. Mat. Med.* 192. Bay Tree with oval, Spear ſhaped Leaves, having 3 Veins which unite above the Baſe. *Camphora officinarum. C. B. P.* 500. The Camphire Tree.

10. Laurus *foliis ovatis planis integerrimis, pedunculis racemoſis, floribus in capitulum collectis.* Bay Tree with plain, oval, entire Leaves, branching Foot Stalks, and Flowers collected into Heads. *Laurus Americana, foliis ſubrotundis, floribus in capitulum collectis. Houſt. MSS. American* Bay Tree with roundiſh Leaves, and Flowers collected into Heads.

The 1ſt Sort is the broad leaved Bay, which grows naturally in *Aſia*, from whence I have received the Berries ſeveral Times. This is too tender to thrive in the open Air in *England*, ſo is commonly kept in Pots or Tubs, and removed into the Green-houſe in Winter. The Leaves of this Sort are much broader than thoſe of the common Bay, and ſmoother: There are male and female Plants of this, as there are alſo of all the other Sorts.

The 2d is the common Bay; of this there are Plants with plain Leaves, and others waved on their Edges, but they ſeem to be the ſame Species, for the young Plants which I have raiſed from the Berries of one, have been a Mixture of both Sorts; but this is undoubtedly a different Species from the firſt, for this Sort thrives well in the open Air, and is ſeldom hurt, except in very ſevere Winters, whereas the firſt will not live abroad in common Winters without Shelter.

The 3d Sort hath very long narrow Leaves, not ſo thick as thoſe of the two former, and of a lighter green; the Branches are covered with a purpliſh Bark, and the male Flowers come out in ſmall Cluſters from the Wings of the Leaves ſitting cloſe to the Branches. This Sort is too tender to thrive in the open Air in *England*, ſo the Plants are generally kept in Pots or Tubs, and houſed in Winter as the firſt Sort.

The 4th Sort grows naturally at *Madeira* and the *Canary Iſlands*, from whence it was formerly brought to *Portugal*, where it has been propagated in ſo great

Plenty, as to appear now as if it was a Native of that Country. In the Year 1620, this Plant was raiſed in the *Farneſian* Garden, from Berries which were brought from *India*, and was ſuppoſed to be a Baſtard Sort of Cinnamon. This grows to the Height of 30 or 40 Feet in temperate Countries, but it is too tender to thrive in the open Air in *England*, ſo the Plants are kept in Pots or Tubs, and removed into the Green-houſe in Winter.

The Leaves of this Sort are larger than thoſe of the common Laurel, they are thick, ſmooth, and of a light green, the Foot Stalks inclining to red; the Branches are regularly diſpoſed on every Side, and the male Flowers are diſpoſed in long Bunches, they are of a whitiſh green Colour: the Berries are much larger than thoſe of the other Sorts. It is called by ſome the Royal Bay, and by others the *Portugal* Bay.

The 5th Sort grows naturally in *Carolina* in great Plenty, where it is called Red Bay; it alſo is found in other Parts of *America*, but not in ſo great Plenty. In ſome Situations near the Sea, this riſes with a ſtrait Trunk to a conſiderable Height, and their Stems are large, but in the inland Parts of the Country they do not grow ſo large. The Wood of this Tree is much eſteemed, being of a fine Grain, ſo is of excellent Uſe for Cabinets, *&c.*

The Leaves of this Sort are much longer than thoſe of the common Bay, and are a little woolly on their under Side, their Edges are a little reflexed; the Veins run tranſverſly from the Mid-rib to the Sides, and the male Flowers come out in long Bunches from the Wings of the Leaves. The female Trees produce their Flowers in looſe Bunches, ſtanding on pretty long Foot Stalks which are red; theſe are ſucceeded by blue Berries ſitting in red Cups.

This Sort is alſo too tender to thrive in the open Air in *England*, for although ſome Plants have lived abroad in a mild Winter, which were planted in a warm Situation, yet the firſt ſharp Winter has deſtroyed them, ſo that theſe Plants muſt be kept in Pots or Tubs, and houſed in Winter like the former.

Theſe 5 Sorts may be propagated by Layers, and the common Sort is generally propagated by Suckers, but thoſe Plants never keep to 1 Stem, but generally ſend out a great Number of Suckers from their Roots, and form a Thicket, but do not advance in Height; therefore the beſt Way to have good Plants, is to raiſe them from the Berries, when they can be procured, for the Plants which come from Seeds, always grow larger than the others, and do not put out Suckers from their Roots, ſo may be trained up with regular Stems. The beſt Way is to ſow the Berries in Pots, and plunge them into a moderate hot Bed, which will bring up the Plants much ſooner than if they were ſown in the full Ground, ſo they will have a longer Time to get Strength before Winter; but the Plants muſt not be forced with Heat, therefore they ſhould be inured to bear the open Air the Beginning of *June*, into which they ſhould be removed, where they may remain till Autumn; then the Pots ſhould be placed under a common Frame, that the Plants may be protected from hard Froſt, but in mild Weather they may enjoy the free Air; for while the Plants are ſo young, they are in Danger of ſuffering in hard Froſt, even the common Sort of Bay. The Spring following, thoſe Plants which will not live in the open Air, ſhould be each tranſplanted into ſeparate Pots; but the common Sort may be planted in Nurſery Beds 6 Inches aſunder each Way, where they may grow 2 Years, by which Time they will be fit to plant where they are deſigned to grow. The other Sorts muſt be conſtantly kept in Pots, ſo ſhould every Year be new potted, and as they advance in Growth, they muſt have larger Pots. As theſe Plants require Shelter in Winter, a few of each Sort will be enough for a large Green-houſe.

The common Bay will make a Variety in all evergreen Plantations, and as it will grow under the Shade of other Trees, where they are not too cloſe, ſo it is very proper to plant in the Borders of Woods, where it will have a good Effect in Winter.

The 6th Sort grows naturally in *North America*, where it riſes to the Height of 8 or 10 Feet, dividing into many Branches, garniſhed with oval Spear-ſhaped Leaves near 3 Inches long, and 1 and a Half broad, ſmooth on their upper Surface, but with many tranſverſe Veins on their under Side; theſe Leaves fall off in the Autumn, like other deciduous Trees. The Flowers I have but once ſeen, thoſe were all male, and of a white herbaceous Colour, but if I remember right, they had but 6 Stamina in each.

The Saſſafras Tree is alſo very common in moſt Parts of *North America*, where it ſpreads greatly by its Roots, ſo as to fill the Ground with Suckers where-ever it is permitted to grow, but in *England* this Shrub is with Difficulty propagated. In *America* it is only a Shrub, ſeldom riſing more than 8 or 10 Feet high; the Branches are garniſhed with Leaves of different Shapes and Sizes, ſome of them are oval and entire, about 4 Inches long and 3 broad; others are deeply divided into 3 Lobes, theſe are 6 Inches long, and as much in Breadth from the Extremity of the two Outſide Lobes; they are placed alternately on pretty long Foot Stalks, and are of a lucid green; theſe fall off in Autumn, and in Spring, ſoon after the Leaves begin to come out, the Flowers appear juſt below them, on ſlender Foot Stalks, each ſuſtaining 3 or 4 ſmall yellow Flowers, which have 5 oval concave Petals, and 8 Stamina in the male Flowers, which are upon different Plants from the female; theſe have an oval Germen, that afterward becomes an oval Berry, which, when ripe, is blue, but the Plants do not produce Fruit in *England*.

The 8th Sort grows naturally in *North America*, in ſwampy Lands; this riſes with a ſhrubby branching Stalk 8 or 10 Feet high, covered with a purple Bark. The Leaves are placed oppoſite, and are near 2 Inches long and 1 broad, ſmooth on their upper Side, but veined on their under, where they are rough. This has not as yet produced Flowers here, but the Berries which were ſent me from *Maryland* were red, and nearly the Size and Shape of the common Bay Berry.

The Camphire Tree grows naturally in *Japan*, and in ſeveral Parts of *India*, where it riſes to a Tree of middling Stature, dividing into many ſmall Branches, garniſhed with oval Spear-ſhaped Leaves, ſmooth on their upper Side, having 3 longitudinal Veins which unite above the Baſe; if theſe are bruiſed, they emit a ſtrong Odour of Camphire, as alſo the Branches when broken. Theſe are male and female on different Trees;

I have only ſeen thoſe of the male, which has flowered plentifully in *England*; theſe were ſmall, and compoſed of 5 concave yellow Petals, very like thoſe of the Saſſafras Tree, and were produced 3 or 4 on each Foot Stalk, in like Manner.

The 10th Sort was diſcovered by the late Dr. *Houſtoun* at *La Vera Cruz*; this riſes with a woody Stalk 20 Feet High, dividing into many Branches, covered with a gray rough Bark; at the Extremity of the Branches are produced the Foot Stalks, which are unequal in Length, but divide into ſeveral ſmaller, each ſuſtaining a Cluſter of ſmall white Flowers, collected into a Head or ſmall Umbel, having one general Involucrum; theſe are male and female on different Trees. The female Flowers which have no Stamina, are ſucceeded by oval Berries, not quite ſo large as thoſe of the common Bay. The Leaves of this Tree are about 2 Inches long and 1 broad, rounded at the Top and entire, ſtanding on very ſhort Foot Stalks.

The Saſſafras Tree is commonly propagated by the Berries, which are brought from *America*; but theſe Berries generally lie in the Ground a whole Year, and ſometimes 2 or 3 Years, before they grow, when they are ſown in the Spring; therefore the ſureſt Method of obtaining the Plants will be, to get the Berries put into a Tub of Earth ſoon after they are ripe, and ſent over in the Earth; and as ſoon as they arrive, to ſow the Berries on a Bed of light Ground, putting them 2 Inches into the Earth; and if the Spring ſhould prove dry, the Bed muſt be frequently watered, and ſhaded from the great Heat of the Sun in the Middle of the Day; with this Management many of the Plants will come up the firſt Seaſon, but as a great many of the Berries will lie in the Ground till the next Spring, ſo the Bed ſhould not be diſturbed, but wait until the Seaſon after, to ſee what will come up: The firſt Winter after the Plants come up, they ſhould be protected from the Froſt, eſpecially in the Autumn; for the firſt early Froſt at that Seaſon is apt to pinch the Shoots of theſe Plants, which are tender and full of Sap, and do them more Injury than the ſevere Froſt of the Winter; for when the extreme Part of the Shoots are killed, it generally affects the whole Plant.

When the Plants have grown a Year in the Seed Bed, they may be tranſplanted into a Nurſery, where they may ſtand 1 or 2 Years to get Strength, and may then be tranſplanted into the Places where they are to remain for good.

There have been ſome of theſe Plants propagated by Layers, but theſe are commonly 2, and ſometimes 3 Years before they put out Roots; and if they are not duly watered in dry Weather, they rarely take Root; ſo that it is uncertain, whether one in three of theſe Layers do ſucceed, which makes theſe Plants very ſcarce in *England* at preſent.

The Wood of this Shrub is frequently uſed to make Tea, which is eſteemed a great Antiſcorbutick; and in *Carolina* they frequently give a Decoction of the Wood and Leaves in intermitting Fevers; but the Flowers of the Shrub are gathered and dried by the moſt curious, and are uſed for Tea.

The *Benjamin* Tree, as it is falſly called, may be propagated as the Saſſafras, by ſowing the Berries: Theſe generally lie long in the Ground, ſo that unleſs they are brought over in Earth, as before directed, they often fail, or at leaſt remain long in the Ground; but this is now frequently propagated by Layers in *England*, which put out Roots pretty freely, when the young Shoots are choſen to make Layers.

The 8th Sort is alſo a Native of the ſame Country with the laſt, and may be propagated by Seeds in the ſame Manner. This may alſo be propagated by Layers, which put out Roots pretty freely; and as the Shrubs do not produce Seeds in *England*, ſo this is the beſt Method to propagate them.

Theſe 3 Sorts will live in the open Air in *England*, but the Saſſafras is often injured by very ſevere Froſts, eſpecially if they are in an expoſed Situation; therefore theſe Plants ſhould have a warm Situation and a looſe Soil, and in moiſt Ground this, and alſo the 8th Sort, will thrive much better than in a dry Soil; for when they are planted on a hot gravelly Soil, they frequently die in Summer when the Seaſons prove dry. They are all of them now much cultivated in *England*, to add to the Variety of Shrubs, but they are not very ornamental Plants; though indeed the Saſſafras makes a good Appearance in Summer, when it is fully cloathed with its large Leaves, which being of different Shapes, makes an agreeable Variety, when intermixed with Shrubs of the ſame Growth.

The Camphire Tree is very near a-kin to the Cinnamon Tree, from which it differs in the Leaves, thoſe of the Cinnamon Tree having 3 Ribs running longitudinally from the Foot Stalk to the Point, which are remarkably large; whereas the Ribs of the Leaves of this Tree are ſmall, and extend toward the Sides, and have a ſmooth ſhining Surface: They are both male and female in different Trees, ſo that there is a Neceſſity for both Sexes to ſtand near each other, in order to have good Seeds.

In *Europe* this Tree is propagated by Layers, which are 2 Years, and ſometimes longer, before they take Root, ſo that the Plants are very ſcarce; and as all thoſe which I have ſeen flower are male Trees, ſo there can be no Hopes of procuring Seeds from them here; but if the Berries of this, and alſo of the Cinnamon Tree, were procured from the Places of their Growth, and planted in Tubs of Earth, as hath been directed for the Saſſafras Tree, there may be a Number of theſe Plants procured in *England*: And if they were ſent to the *Britiſh* Colonies in *America*, they might be there cultivated, ſo as to become a publick Advantage; eſpecially the Cinnamon Tree, which will grow as well in ſome of our Iſlands in the *Weſt Indies*, as in the native Places of its Growth; and in a few Years the Trees might be had in Plenty, for they propagate eaſily by the Berries. The *Portugueze* brought ſome of the Cinnamon Trees from the *Eaſt-Indies*, and planted them on the Iſland of *Princes*, on the Coaſt of *Africa*, where they now abound, having ſpread over a great Part of the Iſland; there are alſo ſome of them growing at the *Madeiras*.

The Camphire Tree does not require any artificial Heat in Winter, ſo that if they are placed in a warm dry Green-houſe, they will thrive very well. During the Winter Seaſon they muſt be ſparingly watered, and in the Summer they ſhould be placed in a warm Situation, where they may be defended from ſtrong Winds, and not too much expoſed to the direct Rays of the Sun; and during this Seaſon, they muſt be frequently refreſhed with Water.

They may be propagated by laying down the young Branches in Autumn, which ſhould be treated in the ſame Manner as is before directed for the *Benjamin.*

The laſt Sort requires a Stove to preſerve it through the Winter in *England*; this is propagated by Seeds, which muſt be procured from the Country, where it grows naturally; but the Berries ſhould always be taken from thoſe Trees which ſtand near the male, otherwiſe they will not grow, which was the Caſe of thoſe Berries ſent to *England* by Dr. *Houſtoun*; for from a large Quantity of the Berries which were diſtributed to ſeveral Perſons, but one Plant came up, and yet the Seeds were freſh.

This Plant requires the ſame Treatment as the Coffee Tree, ſo ſhould be placed in a Stove, with that and other tender Plants of thoſe warm Countries, and always kept in the Stove.

LAURUS ALEXANDRINA. *See* Ruſcus.

LAURUS TINUS. *See* Tinus.

LAWN is a great Plain in a Park, or a ſpacious Plain adjoining to a noble Seat.

As to the Dimenſions of it, it ſhould be as large as the Ground will permit; but never leſs, if poſſible, than 30 or 40 Acres; but this is to be underſtood of Lawns in great Parks, for in Gardens, a Lawn of 8 or 10 Acres is a reaſonable Size for Gardens of a moderate Extent, and 12 or 15 Acres for thoſe of the largeſt Size.

As to the Situation of a Lawn, it will be beſt to be in the Front of the Houſe, and to lie open to the neighbouring Country, and not pent up with Trees.

If the Houſe front the Eaſt, it will be moſt convenient, becauſe the Rooms will be ſhaded in the Afternoon, and ſo the Objects to be viewed from the Houſe will be much beautified by the Sun's ſhining upon them at that Time of the Day; for if the beſt Room of the Houſe front the Lawn, as it always ſhould do, the Afternoon being the moſt uſual Time for People of Faſhion to ſolace themſelves in ſuch Rooms, then the Sun will not be offenſive to thoſe Rooms, nor will the Proſpect be interrupted, but rendered more pleaſant, whereas, were it on the Weſt Side of the Houſe, the Sun, by ſhining from the Object, and directly againſt thoſe Rooms, would, by both, hinder the Proſpect, and the Generality of Proſpects are moſt pleaſant when the Sun ſhines upon them.

Beſides, there is another Inconvenience, if the Lawn be on the Weſt Side of the Houſe, it will give the more Way to the Weſt Wind (which is commonly the greateſt) to injure the Houſe, by its having a free Paſſage to it.

If the Lawn be on the South Side of the Houſe, it may do well enough, for the Reaſons before-mentioned, for the Sun's Rays being then darted obliquely, will not much interrupt the Proſpect, and the Sun ſhining moſt Part of the Day on that Side of the Houſe, will ſtill add to the Beauty of that Front, which ought to be the beſt Front in the Houſe, therefore a Lawn on that Side will much help the Proſpect of the Houſe.

But the moſt deſirable Aſpect for a Lawn is that of the South Eaſt, which is generally the moſt favourable Point in *England*; and as the Sun riſes upon the Front of the Houſe facing this Point, ſo it will add a Chearfulneſs to the Rooms in the Morning, and by Noon the Rays will be oblique to this Front, and in the Afternoon will have entirely left theſe Apartments.

It will not be at all convenient to have the Lawn on the North Side of the Houſe, becauſe it will lay the Houſe too open to the cold North Winds, *&c.* therefore it will be more eligible to plant Wilderneſſes and Woods on the Weſt and North Sides of the Houſe, by Way of Screen to it.

As to the Figure of the Lawn, ſome recommend an exact Square, others an oblong Square, ſome an oval, and others a circular Figure; but neither of theſe are to be regarded, for it may be contrived ſo as to ſuit the Figure of the Ground; and as there ſhould be Trees planted for ſhade on the Boundaries of the Lawn, ſo the Sides may be broken by irregular Plantations of Trees, for if there are not ſome good Proſpects beyond the Lawn, it will be proper to have it bounded on every Side by Plantations, which may be brought round pretty near to each End of the Houſe, ſo that Perſons may ſoon get into Shade, which is a very deſirable Thing in hot Weather, for where that is wanting, few Perſons care to ſtir abroad when the Sun ſhines warm.

If in the Plantations round the Lawn, the Trees are placed irregularly, ſome breaking much forwarder on the Lawn than others, and not crowded too cloſe together, they will make a much better Appearance than any regular Plantations can poſſibly do; and if there are Varieties of Trees properly diſpoſed, they will have a good Effect; but it ſhould be obſerved, that no other but thoſe which make a fine Appearance, and that grow large, ſtrait, and handſome, ſhould be admitted here, as they are placed in the conſtant View from the Houſe.

Many Perſons have preferred the Lime Tree for this Purpoſe, on Account of their regular Growth; but as its Leaves often change their Colour, and begin to fall very ſoon in Autumn, occaſioning a great Litter in the Garden; and from the End of *July* making but an indifferent Appearance, they are not to be eſteemed for theſe Plantations.

The Elm, Oak, Beech, and Cheſtnut, among the deciduous Trees, are to be preferred to all others, as they keep their Leaves late in Autumn; and theſe are all of them large growing Trees, ſo are very proper for this Purpoſe.

If there are ſome Clumps of ever-green Trees intermixed with the deciduous Trees in this Plantation, it will add to the Beauty of it, eſpecially in the Winter Seaſon; the beſt Sorts for this Purpoſe are Lord *Weymouth*'s Pine, the Silver and Spruce Firs, which will grow faſt, and become large Trees; and as the two latter Sorts always grow pyramidically, they will have a good Effect to the Sight, when properly diſpoſed with the deciduous Trees; but as theſe generally feather out their Branches near the Ground, they ſhould be planted where they do not obſtruct the View of any diſtant Objects.

But as moſt Perſons who take Pleaſure in beautifying their Seats in the Country, are in haſte for Shade, they generally plant the Trees too cloſe together, and often in ſuch a Manner, as to render it difficult, when the Trees are advanced, to reduce their Number, without Injury to the Deſign; therefore thoſe Trees ſhould be firſt planted, which are deſigned to remain, and then there may be ſome few others planted for preſent Shade, which may afterward be taken away. When Perſons who are beautifying their Seats meet with full grown Trees on the Spot, it is a great Pleaſure, for theſe ſhould not be deſtroyed, if they can poſſibly ſtand.

LAWSONIA. *Lin. Gen. Pl.* 433. *Henna. Ludw.* 143.

The *Characters* are,

The Flower has a ſmall permanent Empalement, divided into 4 *Parts at the Top. The Flower is compoſed of* 4 *oval Spear-ſhaped Petals, which ſpread open, and* 8 *ſlender Stamina the Length of the Petals, which ſtand by Pairs between them, terminated by roundiſh Summits. It hath a roundiſh Germen, ſupporting a ſlender Style, which is permanent, crowned by a headed Stigma. The Germen becomes a globular Capſule, ending in a Point, having* 4 *Cells, filled with angular Seeds.*

The *Species* are,

1. LAWSONIA *ramis inermibus. Flor. Zeyl.* 134. *Lawſonia* whoſe Branches have no Spines. *Liguſtrum Ægyptiacum latifolium. C. B. P.* 476. Broad leaved *Egyptian* Privet, called *Alhenna*, or *Henna* by the *Arabians.*

2. LAWSONIA *ramis ſpinoſis. Flor. Zeyl.* 134. *Lawſonia* with prickly Branches. *Rhamnus Malabaricus* MAIL-ANSKI. *Pluk. Alm.* 38. *Tab.* 220. *Malabar* Buckthorn, called Mail-anſki.

The 1ſt Sort grows naturally in *India*, *Egypt*, and other warm Countries, where it riſes with a ſhrubby Stalk, 8 or 10 Feet high. The Branches come out by Pairs, oppoſite; theſe are ſlender, and covered with a whitiſh yellow Bark, and are garniſhed with oblong ſmall Leaves, of a pale green, ending in acute Points, placed by Pairs oppoſite. The Flowers are produced in looſe Bunches at the End of the Branches; they are of a gray or dirty white Colour, and are compoſed of 4 ſmall Petals which turn backward at the Top. The Flowers are ſucceeded by roundiſh Capſules with 4 Cells filled with angular Seeds.

The Leaves of this Shrub are much uſed by the *Egyptian* Women to colour their Nails yellow, which they eſteem an Ornament.

The 2d Sort grows naturally in both *Indies*, for I have received Specimens of it from the *Spaniſh Weſt-Indies*, where it was found growing naturally in great Plenty.

This riſes with a woody Trunk, 18 Feet high or more. The Wood is hard and cloſe, covered with a light gray Bark. The Branches come out alternate, and are garniſhed with oblong oval Leaves, which ſtand without Order; and at the Joints where the Leaves are placed, come out ſingle ſtrong ſharp Thorns. The Flowers are produced in looſe Bunches from the Side of the Branches; they are of a pale yellow Colour, and of a diſagreeable Scent; they have 4 Petals, which ſpread open; between each of theſe are ſituated 2 pretty ſtrong Stamina, terminated by roundiſh Summits. After the Flowers are paſt, the Germen becomes a roundiſh Capſule with 4 Cells, including many angular Seeds.

Theſe Plants are both propagated by Seeds, which ſhould be ſown on a hot Bed early in the Spring, that the Plants when they come up may have Time to get Strength before Winter. When the Plants are fit to remove, they ſhould be each planted in a ſmall Pot filled with light ſandy Earth, and plunged into a hot Bed of Tanners Bark, where they muſt be ſcreened from the Sun till they have taken new Root, then their Treatment ſhould be the ſame as that of the Coffee Tree with this Difference only, not to let theſe Plants have ſo much Water, but eſpecially in the Winter, during which Seaſon it ſhould be given to them very ſparingly, for by over watering theſe Plants, I have known many of them deſtroyed; theſe Plants are too tender to thrive in the open Air in *England*, ſo they muſt conſtantly remain in the Stove, but in hot Weather, they ſhould have Plenty of free Air admitted to them.

LAYERS. Many Trees may be propagated by Layers, which do not produce Seeds here, ſo are not eaſily increaſed by any other Method.

This is to be performed by ſlitting the Branches a little Way, and laying them under the Mould about half a Foot; the Ground ſhould firſt be made very light, and after they are laid, they ſhould have a little Water given them.

If they do not comply well in the laying of them down, they muſt be pegged down with a Hook, or two. and if they have taken ſufficient Root by the next Winter; they muſt be cut off from the main Plants, and planted in the Nurſery, as is directed about Seedlings.

Some twiſt the Branch, or bare the Rind, and if it be out of the Reach of the Ground, they faſten a Tub or Baſket near the Branch, which they fill with good Mould, and lay the Branch in it.

Laying of Trees.

This Operation is thus performed:

1ſt, Take ſome of the Boughs and lay them into the Ground about half a Foot deep in fine freſh Mould, leaving them with the End of the Layer about a Foot, or a Foot and a Half, out of the Ground, and keep them moiſt during the Summer Seaſon, and they will probably have taken, and be fit to remove, in Autumn, and if they have not by that Time taken Root, they muſt lie longer.

2dly, Tie a Piece of Wire hard round the Bark of the Bough, at the Place you intend to lay in the Ground, and twiſt the Ends of the Wire, ſo that they may not untie, and prick the Place above the Wire, through the Bark, with an Awl in ſeveral Places, and then lay it in the Ground, as before directed.

3dly, Cut a ſlip upwards at a Joint, as is practiſed in laying Carnations, which by Gardeners is called Tonguing the Layers.

4thly, Twiſt the Place that you deſign to lay in the Ground, like a Withy, and lay it into the Ground as directed in the firſt Way of Laying.

5thly, Cut a Place round about the Bough (that is deſigned to be laid) an Inch or two, at the Place that is moſt convenient to lay into the Ground, and manage it as is directed in the firſt Method of Laying.

The Seaſon for laying hardy Trees, that ſhed their Leaves, is in *October*, but for ſuch as are tender, in *March*; for Ever-greens, *June* or *Auguſt* are good Seaſons.

Though Layers may be laid at any Time in the Year, the before-mentioned Seaſons are moſt proper, for the Reaſons following, becauſe they have the whole Winter and Summer to prepare and draw Root, for at theſe Times of the Year the Sun has ſufficient Power on the Sap of the Tree to feed the Leaf and Bud, but has not Power ſufficient to make a Shoot.

And if that ſmall Quantity of Sap that does ariſe be hindred, as it will by ſome of the preceding Ways of Laying, the Leaves and Buds will gently crave of the Layer, and by that Means will prepare the Layer to take Root, or put forth Roots a little to maintain itſelf, finding it cannot have it from the Mother Plant.

And therefore, becauſe it wants but little Nouriſhment at that Time of the Year, it is better to lay Layers of Trees, or to ſet Cuttings, than at other Times, either in the Winter, when the Sap ſtirs but little, or in the Summer when the Sap abounds, or in the Spring when it begins to riſe, becauſe it is then apt to come too ſuddenly to draw Sap from the Layer, before the Layer has drawn or prepared for Root.

However, the Spring or Summer may do well for ſmall Plants, becauſe ſuch Plants, being but ſhort-lived draw Root the quicker.

If you would lay young Trees from a high Standard, the Boughs of which cannot be bent down to the Ground, then you muſt make Uſe of Oſier Baſkets, Boxes, or Pots, filled with fine-ſifted Mould, mixed with a little rotten Willow Duſt, which will keep Moiſture to aſſiſt the Layer in taking Root; this Baſket, Box, &c. muſt be ſet upon a Poſt, or Treſſel, &c. and the Bough muſt be laid according to either of the four firſt Ways of Laying, but too much Head muſt not be left on, leſt that be injured by the Wind, or by its own Motion rub off the tender Root, and the ſmaller the Boughs are, the leſs Way they ſhould be left out of the Ground, and Care muſt be taken to keep them clear from Weeds.

The harder the Wood of the Tree is, the young Shoots will take Root beſt, but if the Wood be ſoft, the older Boughs will take Root the beſt.

There are many Kinds of Trees and Plants which will not put out Roots from their woody Branches, though laid down with the utmoſt Care, yet if the young Shoots of the ſame Year are laid in *July*, they will often put out Roots very freely, ſo that when any Plants are found difficult to propagate by Layers in the common Way, they ſhould be tried at this Seaſon; but as theſe Shoots will be ſoft and herbaceous, they muſt not have too much Wet, for that will cauſe them to rot, therefore it will be a better Method to cover the Surface of the Ground over the Layers with Moſs, which will prevent the Ground from drying too faſt, ſo that a little Water now and then will be ſufficient.

LEAVES. A Leaf is defined to be a Part of a Plant extended into Length and Breadth, in ſuch a Manner as to have one Side diſtinguiſhable from the other, they are properly the moſt extreme Part of a Branch, and the Ornament of the Twigs, and conſiſt of a very glutinous Matter, being furniſhed every-where with Veins and Nerves; one of their Offices is, to ſubtilize and give more Spirit to the Abundance of nouriſhing Sap, and to convey it to the little Buds.

We ſhall firſt conſider the Diſtinctions which are made by Botaniſts in their Definitions of the Shape and Form of Leaves in their Titles and Deſcriptions of Plants, and afterward conſider their Uſes in Vegetation.

The Leaf of a Plant, or Tree, is diſtinguiſhed from that of Flowers, the firſt is called *Folium* in *Latin*, and the other *Petalum*, therefore what is to be underſtood here of Leaves, are thoſe which are ranged on the Branches and Stalks of Plants, and have no Connection with the Flower.

Theſe Leaves are either ſimple or compound.

Simple Leaves are thoſe of which the Foot Stalk ſupports but one, compound are thoſe of which the Foot Stalk ſuſtains many.

Simple Leaves are diſtinguiſhed by their Shape in the following Manner: Orbiculate, or round Leaves (*orbiculatum*) are ſuch whoſe Breadth are equal to their Length, and every Part of their Edges equally diſtant from the Center, as in Fig. 1.

A roundiſh Leaf (*ſubrotundum*) differs from the former, by being either too long, or too broad, or prominent in one or more Parts, as in Fig. 2.

An oval, or Egg-ſhaped Leaf (*ovatum*) is longer than it is broad; the Baſe, or lower Part of it forms a Segment of a Circle, but the upper Extremity is not in Proportion, but ſmaller, as in Fig. 3.

An obverſe oval Leaf is one whoſe Foot Stalk is fixed to its ſmaller End.

An oval, or elliptick Leaf (*ovale ſive ellipticum*) is one whoſe Length exceeds its Breadth, and both Ends are equal, forming Segments of Circles, as Fig. 4.

A parabolical Leaf (*parabolicum*) is one whoſe Length exceeds its Breadth, and is narrowed from the Baſe upward, Fig. 5.

A ſpatulated Leaf (*ſpatulatum*) is of a roundiſh Figure, but narrow at the Baſe, and linearly lengthened, Fig. 6.

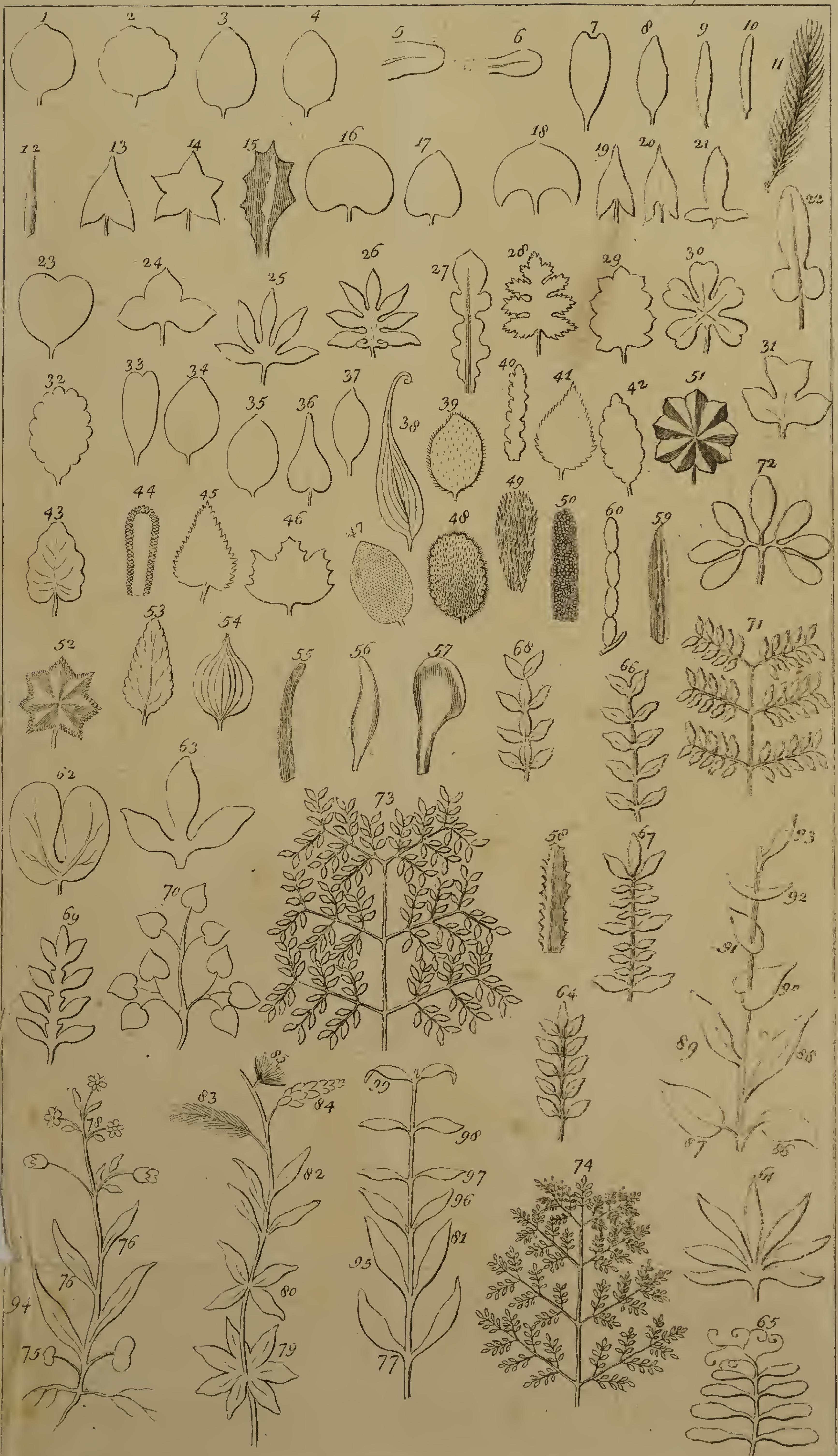
A Wedge-ſhaped Leaf (*cuneiforme*) is one whoſe Length exceeds the Breadth, and is narrowed to the Baſe, Fig. 7.

An oblong Leaf (*oblongum*) is one whoſe Length greatly exceeds its Breadth, and each Extremity is narrower than a Segment of a Circle, Fig. 8.

A Spear-ſhaped, or Spear-pointed Leaf (*lanceolatum*) is oblong, and grows narrower toward both Ends, and terminates in a Point, Fig. 9.

A linear Leaf (*lineare*) is one whoſe two Sides run almoſt parallel to each other; they are uſually narrow, and

To front LEA



and ſomewhat broader in the Middle than at the two Ends, Fig. 10.

Aceroſum is when the linear Leaf ſtays on the Tree, and is ever-green, as in the Fir, Yew, &c. Fig. 11.

An Awl-ſhaped Leaf (*ſubulatum*) is one which is oblong and narrow, broadeſt at the Baſe, and thence gradually terminating in a Point, Fig. 12.

A triangular Leaf (*triangulare*) is compoſed of three rectilinear Sides and three Angles, Fig. 13.

A quadrangular and quinquangular Leaf, only differ from the former in the Number of their Sides, or Angles, Fig. 14.

A deltoide Leaf is one with four Angles, of which thoſe of the Summit are farther diſtant from the Center than thoſe of the Sides, Fig. 15.

A round Leaf (*rotundum*) is one without any Angles.

A Kidney-ſhaped Leaf (*reniforme*) is of a roundiſh Figure, hollowed a little at the Baſe, but without any Angles, Fig. 16.

A Heart-ſhaped Leaf (*cordatum*) is of an ovated Shape, hollowed a little at the Baſe, but without any Angles, Fig. 17.

A Moon-ſhaped Leaf (*lunulatum*) is one in Form of a Half-moon; it is a roundiſh Leaf, hollowed at the Baſe, with two curvilinear Angles in Form of Sickles, Fig. 18.

An Arrow-pointed Leaf (*ſagittatum*) is one which is ſhaped like the Point of a bearded Arrow, it is triangular, and hollowed at the Baſe for the Inſertion of the Foot Stalk, Fig. 19.

A Heart Arrow-ſhaped Leaf (*cordato-ſagittatum*) is like the former, but the Sides of it are convex, Fig. 20.

A Spear-pointed Leaf (*haſtatum*) is of a triangular Form, the Sides and Baſe of which are hollowed, ſo as to reſemble a Leaf compoſed of three Parts, Fig. 21.

A Fiddle-ſhaped Leaf (*panduræ forme*) is oblong, larger at both Ends than in the Middle, the two Sides being compreſſed like the Body of a Violin, Fig. 22.

A cleft or divided Leaf (*fiſſum*) is divided by linear Sinuations and ſtrait Margins; a two, three, or many pointed Leaf is of this Sort, divided into ſo many Parts, Fig. 23.

A lobated Leaf (*lobatum*) is one which is divided almoſt to the Midrib, into Parts which ſtand diſtant from each other, and are rounded at their Edges; according to the Number of theſe Parts, it is called bilobed, trilobed, or quadrilobed, &c. Fig. 24.

A handed Leaf (*palmatum*) is one which is divided into ſeveral unequal Segments down to the Baſe, where they are united, and reſemble an open Hand, Fig. 25.

A Wing-pointed Leaf (*pinnatifidum*) is one which is tranſverſly divided into oblong horizontal Diviſions, Fig. 26.

A Lyre-ſhaped Leaf (*lyratum*) is one which is divided into tranſverſe Segments, the upper ones being larger than the lower, Fig. 27.

A laciniated or jagged Leaf (*laciniatum*) is one whoſe Sides are variouſly divided in Jaggs, which are again divided without any Order, Fig. 28.

A ſinuated Leaf (*ſinuatum*) is one which has many Sinuations on its Sides, but is not indented or notched on its Edges, Fig. 29.

An indented ſinuated Leaf (*dentato-ſinuatum*) is one like the former, but the Side Lobes are of a linear Figure.

A divided Leaf (*partitum*) is one which is divided into many Parts to the Baſe, ſo as to appear like many Leaves till cloſely examined. Theſe are called *bipartite, tripartite, &c.* according to the Number of Parts, Fig. 30.

An entire Leaf (*integrum*) is one that is undivided, and has ſmooth Edges.

A truncated Leaf (*truncatum*) is one whoſe Summit ſeems as though it were cut off by a ſtrait Line, in a tranſverſe Direction.

A bitten Leaf (*præmorſum*) is one which is terminated by very blunt unequal Cuts, Fig. 31.

A retuſe Leaf (*retuſum*) is one whoſe Extremity is terminated by an obtuſe Sinus, Fig. 32.

An indented Leaf (*emarginatum*) is one whoſe Extremity is a little indented, Fig. 33.

An obtuſe Leaf (*obtuſum*) is one whoſe Point is terminated bluntly, or by a Segment of a Circle, Fig. 34.

An acute Leaf (*acutum*) is one whoſe Point is terminated in an acute Angle, Fig. 35.

An acuminated Leaf (*acuminatum*) is one which is terminated by an Awl-ſhaped Point, Fig. 36.

A pointed obtuſe Leaf (*obtuſum acumine*) is one whoſe upper Part is rounded, but draws to an acute Point, Fig. 37.

A Claſper Leaf (*cirrhoſum*) is one which terminates with a Tendril, Fig. 38.

A ſpinous Leaf (*ſpinoſum*) is one whoſe Edge or Border ends with hard ſtiff Prickles, Fig. 39.

An indented Leaf (*dentatum*) is one whoſe Edge has horizontal Points of the ſame Conſiſtence with the Leaf, but are ſeparated from each other, Fig. 40.

A ſawed Leaf (*ſerratum*) is one whoſe Edges are ſharply notched like the Teeth of a Saw, which make acute Angles bending toward the Top, Fig. 41.

A backward ſawed Leaf (*retrorſo-ſerratum*) is one whoſe Serratures or Teeth, are bent toward the Baſe of the Leaf.

A double ſawed Leaf (*duplicato-ſerratum*) is one whoſe Edges are ſawed with larger Teeth, and the Edges of theſe are again ſawed in the ſame Manner.

A crenated Leaf (*crenatum*) is one whoſe Edges are indented with Indentures, which neither turn toward the Point nor Baſe. When theſe Indentings terminate obtuſely, it is called obtuſe crenated; when acutely, acute crenated; when the Indentures are again indented, it is called double crenated (*duplicato-crenatum*), Fig. 42.

A bowed Leaf (*repandum*) is one whoſe Margin has ſeveral obtuſe Sinuſes which are a little waved, Fig. 43.

A cartilaginous Leaf (*cartilagineum*) is one, whoſe Edge is furniſhed with a firm Cartilege of a different Subſtance with the Leaf, Fig. 44.

A ciliated Leaf (*ciliatum*) is one whoſe Edge is ſet with parallel Hairs, ſo as to reſemble rhe Hairs of the Eye-lid, Fig. 45.

A torn Leaf (*laceratum*) is one whoſe Edges are cut into Segments of irregular Shapes.

A gnawed Leaf (*eroſum*) is one which is ſinuated, and the Sinuſes have their Edges again indented with ſmall obtuſe Sinuations, Fig. 46.

An entire Leaf (*integerrimum*) is one whoſe Margin is entirely free of all Notches or Indentures.

A viſcous Leaf (*viſcidum*) has its Superficies covered with a clammy Moiſture which is not fluid.

A downy Leaf (*tomentoſum*) is one whoſe Surface is covered with Hairs ſo ſhort and fine, that the Eye does not diſtinguiſh them ſingly, though the Leaf is evidently downy both to the Sight and Touch, Fig. 47.

A woolly Leaf (*lanatum*) is one whoſe Surface is covered with a kind of woolly Subſtance, like the ſhort Wool of Lambs.

A hairy Leaf (*piloſum*) has its Surface furniſhed with long diſtinct Hairs, Fig. 48.

A ſtinging Leaf (*hiſpidum*) is one whoſe Surface is covered with rigid Hairs, which either ſting or prick on being touched, Fig. 49.

A rough Leaf (*ſcabrum*) is one whoſe Surface has on it ſeveral little irregular Prominences.

A prickly Leaf (*aculeatum*) is one whoſe Surface is covered with ſtrong ſharp Points or Thorns, which adhere lightly to the Surface.

A channelled Leaf (*ſtriatum*) is when its Surface has a Number of parallel longitudinal Furrows.

A pimpled Leaf (*papilloſum*) is one whoſe Surface has many little roundiſh Protuberances like Nipples, Fig. 50.

A punctuated Leaf (*punctatum*) is one whoſe Surface has many hollow Points diſperſed over it.

A ſplendent Leaf (*nitidum*) is one whoſe Surface is ſmooth and ſhining, as if poliſhed by Art.

A plaited Leaf (*plicatum*) is one which has ſeveral angular Riſings and Hollows towards its Borders, as if folded up, Fig. 51.

A waved Leaf (*undulatum*) is one whoſe Surface toward the Edges, riſes and falls convexly like the Waves of the Sea.

A curled Leaf (*criſpum*) is when the Periphery of the Leaf grows larger than the Diſk will admit, ſo that the whole Surface is raiſed in Waves, Fig. 52.

A rough Leaf (*rugoſum*) is one whoſe Veins are contracted and ſunk below the Diſk, and the intermediate fleſhy Parts riſe in irregular Forms, ſo as to appear rough, Fig. 53.

A concave Leaf (*concavum*) is one whoſe Middle is ſunk down or hollowed.

A veined Leaf (*venoſum*) is one whoſe Veins are branched, and appear to the naked Eye.

A convex Leaf (*convexum*) is one whoſe Middle riſes into a protuberant Form.

A nervous Leaf (*nervoſum*) is when the Veins are extended Lengthways from the Baſe toward the Summit, without branching, Fig. 54.

A coloured Leaf (*coloratum*) is one which has other Colours than green.

A ſmooth Leaf (*glabrum*) is one whoſe Surface is ſmooth, without any Inequalities.

A taper Leaf (*teres*) is one of a thick Subſtance and cylindrical Form.

A half taper Leaf (*ſemicylindraceum*) is one which is of a cylindrical Form, flatted on one Side.

A hollow Leaf (*tubuloſum*) is one which is hollow like a Pipe, as thoſe of the Onion.

A fleſhy Leaf (*carnoſum*) is one that is ſucculent or full of Pulp.

A compreſſed Leaf (*compreſſum*) is one whoſe marginal Sides are preſſed, ſo that the Subſtance of the Leaf is larger than the Diſk.

A Plane Leaf (*planum*) is one whoſe Surfaces are every where parallel.

A gibbous Leaf (*gibbum*) is one which is convex on both Sides, the Middle being fuller of Pulp.

A depreſſed Leaf (*depreſſum*) is one whoſe Diſk is more depreſſed than the Sides.

A guttered Leaf (*canaliculatum*) is one which has a longitudinal deep Furrow, running through the Middle of the Leaf, and is almoſt cylindrical, Fig. 55.

A Sword-ſhaped Leaf (*enſiforme*) is one with thin Edges, with a prominent Rib running from the Baſe to the Point in the Middle.

A Faulchion-ſhaped Leaf (*acinaciforme*) is one which is fleſhy and compreſſed, with one of its Edges convex and narrow, the other thick and ſtrait, Fig. 56.

An Ax-ſhaped Leaf (*dolabriforme*) is one which is roundiſh, obtuſe, and compreſſed, gibbous on the Outſide, the Inſide ſharp edged, and taper below, Fig. 57.

A Tongue-ſhaped Leaf (*linguiforme*) is linear, fleſhy, and obtuſe, convex on the under Side, and has often cartilaginous Edges, Fig. 58.

A two-edged Leaf (*anceps*) is one which has two prominent Angles, running Lengthways on a convex Diſk.

A three cornered Leaf (*triquetrum*) has three longitudinal plain Sides like an Awl-ſhaped Leaf.

A three edged Leaf (*trigonal*) is much like the former, but in this the Ribs are ſharp and membranaceous, the Surface of the Leaf being channelled. When a Leaf has four or five Angles, it is called *tetragonal* and *pentagonal*, *&c.*

A furrowed Leaf (*ſulcatum*) is one that has ſeveral Ridges running Lengthways, which have obtuſe Sinuſes, Fig. 59.

A Keel-ſhaped Leaf (*carinatum*) is one that has the under Part of the Diſk prominent the whole Length, and the upper Concave like the Keel of a Boat.

A membranaceous Leaf (*membranaceum*) is one wholly compoſed of Membranes, without any apparent Pulp between.

A compound Leaf (*compoſitum*) in general means one, which is formed of ſeveral ſmall Leaves ſtanding upon one Foot Stalk, but theſe Leaves are diviſible again to the Structure and Poſition of the ſmall Leaves.

1ſt, Into ſuch as are properly and diſtinctly called *compound* Leaves; 2dly, the *decompound*; 3dly, the *ſupradecompound*, of each of theſe in its Place.

In deſcribing theſe Kinds of Leaves, the whole Leaf which is the Reſult of the Combination, is conſidered as one Leaf, called (*folium*) and the ſmall Leaves which together compoſe it (*folioli*) or Lobes.

A ſimple compound Leaf, is one whoſe ſimple Foot Stalk bears more than one Leaf.

A jointed one (*articulatum*) is when one Leaf grows out of the Point of another, Fig. 60.

A ſin-

A fingered Leaf (*digitatum*) is one which is compoſed of ſeveral ſmall Leaves joining to one Foot Stalk at their Baſe, ſpreading open like the Fingers of a Hand, Fig. 61.

A two lobed Leaf (*binatum*) is one with two ſmall Leaves on one Foot Stalk, Fig. 62.

A three lobed Leaf (*ternatum*) is one with three ſmall Leaves, which is frequently called a *trifoliate* Leaf, Fig. 63.

A cinquefoil Leaf (*quinatum*) has five ſmall Leaves on the ſame Foot Stalk.

A winged Leaf (*pinnatum*) is one which has many ſmall Leaves, ranged on each Side a ſingle Foot Stalk like Wings; of theſe there are ſeveral Kinds.

An unequal winged Leaf (*pinnatum cum impare*) is a winged Leaf, terminated by an odd Lobe or (*ſolioli*), Fig. 64.

A Claſper winged Leaf (*pinnatum cum cirrho*) is a winged Leaf ending with a Tendril or Claſper, Fig. 65.

An abrupt winged Leaf (*abruptum*) is a winged Leaf not terminated by an odd Lobe or Claſper, Fig. 66.

An oppoſite winged Leaf (*oppoſite pinnatum*) is when the ſmall Leaves or Lobes, are placed oppoſite on the Mid-rib.

An alternate winged Leaf (*alternatim pinnatum*) is when the ſmall Leaves ſtand alternate.

An interrupted winged Leaf (*interruptè pinnatum*) is when there are ſmaller Lobes intermixed with larger upon the ſame Mid-rib, Fig. 67.

A jointed winged Leaf (*articulatè pinnatum*) is when the common Foot Stalk is jointed, Fig. 68.

A running winged Leaf (*decurſivè pinnatum*) is one whoſe ſmall Leaves run along the Foot Stalk from one to another, Fig. 69.

A conjugated Leaf (*conjugatum*) is one which has but two ſmall Leaves on the ſame Foot Stalk.

We next proceed to the decompounded Leaves.

A decompounded Leaf (*decompoſitum*) is one whoſe Foot Stalk is divided, and joins together many ſmall Leaves.

A double conjugated Leaf (*bigeminatum*) is one whoſe Foot Stalk divides in Pairs, and corrects four ſmall Leaves on the Top, or it is compoſed of two Conjugations.

A double trifoliate Leaf (*biternatum*) is one whoſe Foot Stalk is divided, and each Diviſion ſuſtains three ſmall Leaves, Fig. 70.

A double winged Leaf (*bipinnatum*) is one whoſe Foot Stalk is divided, and theſe Diviſions have ſmall Leaves ranged on their Side like Wings, Fig. 71.

A footed or branched Leaf (*pedatum*) is one whoſe Foot Stalk is divided, and has ſome ſmall Leaves placed on the inner Side, Fig. 72.

A greater compounded Leaf (*ſupra decompoſitum*) is one whoſe Foot Stalk is many Times divided, and each Diviſion is garniſhed with ſmall Leaves.

A triternate Leaf (*triternatum*) is one whoſe Foot Stalk connects three double trifoliate Leaves.

A triple winged Leaf (*tri-pinnatum*) is one compoſed of ſeveral double winged Leaves; if theſe are terminated by two ſmall Leaves. they are ſaid to be abrupt, Fig. 73. but when they are terminated by an odd one, they are called an irregular, triple, winged Leaf, Fig. 74.

We next come to conſider the Diſtinctions of Leaves from their Place, Poſition, Inſertion, or their Direction, when joined to the other Parts of Plants.

A Seed Leaf (*ſeminale*) is the firſt Leaf of the Plant, and is what before was called *cotyledones*, theſe are different in Form and Subſtance from the other Leaves, Fig. 75.

A Bottom Leaf (*radicale*) is one whoſe Foot Stalk riſes immediately from the Root.

An upper Leaf (*caulinum*) is one which grows from the Stalk of the Plant, Fig. 76.

An axillary Leaf (*axillare*) is one which grows from the Inſertions of the Branches, Fig. 77.

A Flower Leaf (*florale*) is one that is inſerted near the Flower, and never appears but with it, Fig. 78.

A ſtarry Leaf (*ſtellate*) Fig. 79. or whorled Leaf (*verticillata*) is when ſeveral Leaves are diſpoſed in Whorls round the Stalk, Fig. 80.

Oppoſite Leaves (*oppoſita*) are when they ſtand by Pairs on each Side the Stalk, Fig. 81.

Alternate Leaves (*alterna*) are when they ſtand alternate above each other, Fig. 82.

Sparſed Leaves (*ſparſa*) are ſuch as ſtand without Order over the whole Plant.

Cluſter Leaves (*conferta*) are ſuch as come out from the Side of the Branches in Cluſters, and are ſo cloſe to one another, that it is not eaſy to diſcover their exact Situation, Fig. 83.

Imbricated Leaves (*imbricata*) are ſuch as are placed over each other like Tiles on a Houſe, or the Scales of Fiſhes, Fig. 84.

Faſciculated Leaves (*faſciculata*) are ſuch as grow in Bunches from the ſame Point, Fig. 85.

Diſticha is when the Leaves are ranged along only upon two Sides of the Branches, as in the Fir Tree.

A Target-ſhaped Leaf (*peltatum*) is one whoſe Foot Stalk is fixed to the Diſk, and not to the Baſe or Edge of the Leaf, Fig. 86.

Petiolatum is when the Foot Stalk is inſerted to the Baſe of the Margin, Fig. 87.

Seſſile is when the Leaf ſits cloſe to the Stalk or Branch, and has no Foot Stalk, Fig. 88.

A running Leaf (*decurrens*) is when the Leaf adheres to the Stalk or Branch, and is extended along the Stalk from the Baſe, ſo as to form a leafy Border on each Side the Stalk, Fig. 89.

Amplexicaule is when the Baſe of the Leaf environs or embraces the Sides of the Stalk entirely, Fig. 90.

Semiamplexicaule, is when the Baſe of the Leaf reaches but half round the Stalk.

A perfoliate Leaf (*perfoliatum*) is one which is perforated by the Stalk or Branch, which do not touch the Margin, Fig. 91.

Connatum, is when the two oppoſite Leaves cohere at their Baſe, ſo as to form one Body embracing the Stalk, Fig. 92.

Vaginans, is when the Baſe of the Leaf forms a Kind of Cylinder, embracing the Stalk like a Sheath, as in Corn, Graſs, &c. Fig. 93.

The Direction of Leaves.

An adverſe Leaf (*adverſum*) is one whoſe Sides reſpect the Meridian and not the Heavens, as the Ginger, *&c.*

An oblique Leaf *(obliquum)* is when the Baſe of the Leaf regards the Sky, and the Summit the Horizon.

An inflexed or incurved Leaf *(inflexum)* is one which grows in Form of a Bow, turning its Point toward the Stalk again, Fig. 94.

Adpreſſum, is when the Diſk of the Leaf approaches near the Stalk.

An erect Leaf *(erectum)* is one ſo ſituated, as to make a very acute Angle with the Stalk, Fig. 95.

Patens, is when the Leaf does not make ſo acute an Angle with the Stalk as the former, and yet does not ſtand horizontal, Fig. 96.

An horizontal Leaf *(horizontale)* is one which ſtands perfectly at right Angles with the Stalk, Fig. 97.

A reflexed Leaf *(reclinatum)* is one whoſe Summit is lower than the Baſe, Fig. 98.

A revolved Leaf *(revolutum)* is one whoſe upper Part is rolled downward, Fig. 99.

A dependent Leaf (*dependens*) is one whoſe Summits point to the Earth.

A rooting Leaf (*radicans*) is one which puts out Roots.

A floating Leaf (*natans*) is one which floats on the Surface of the Water, as the Water Lily, *&c.*

Demerſum, is uſed to expreſs a Leaf ſunk below the Surface of the Water.

Having explained the ſeveral Forms of Leaves, by which Botaniſts diſtinguiſh them, and alſo their Poſition, both in Regard to the other Parts of the Tree, or Plant, and that of the Earth, we ſhall next proceed to their Structure and Uſes, for theſe were not deſigned by the wiſe Creator, only for Ornament, but they are of more important Uſe in Vegetation, and are as variouſly conſtructed in their ſeveral Parts, as their ſeveral Uſes for which they are deſigned.

Some Plants have very thick fleſhy Leaves, whoſe pulpy Subſtance is always moiſt; theſe are ſuch Plants as naturally grow upon dry barren rocky Places, and for the moſt Part are Natives of warm Countries; and as theſe perſpire very little in Compariſon of moſt other Plants, they are adapted to grow in ſuch Places where they can receive very little Nouriſhment from the Earth. Moſt of the Leaves of theſe Plants have a thin compact Skin over their Surface, with very ſmall minute Pores, whereby the deſcending Moiſture is thrown off, which, if admitted into the Subſtance of the Leaves, or Stalks, would in a very ſhort Time cauſe a Mortification, and deſtroy the Plant.

The Leaves of all thoſe Trees and Shrubs which continue their Verdure all the Year, have alſo a thin compact Skin, or Cover, over their Surfaces, as is eaſily diſcovered by macerating them in Water, in order to ſeparate the Parenchyma from the Veſſels of the Leaves, which cannot be effected in any of theſe Evergreens, until the thin Parchment-like Cover is taken off; theſe Trees and Shrubs are found, by Experiment, to imbibe and perſpire but little in the ſame Space of Time, when compared with the deciduous Trees and Shrubs; and it is principally owing to this cloſe Covering, as alſo to the ſmall Proportion of Moiſture contained in their Veſſels, that they retain their Verdure, and continue through the Winter on the Trees. The nutritive Juices of theſe Plants always abound more or leſs with an oily or terebinthinous Quality, which ſecures them from the Injury of Froſt, ſo that many of theſe evergreen Trees are adapted to grow in the coldeſt Parts of the habitable World.

In all the Leaves of Trees and Plants which I have examined, there are two Orders of Veins or Nerves, one belonging to each Surface, and I have generally obſerved, that the lower Lamina on the under Side of the Leaf, had the Ramifications larger, and were capable of admitting a Liquid to paſs through them, which thoſe of the upper Surface would not; theſe two Orders of Veins are inoſculated at ſeveral places, but not ſo cloſely connected, but that they may be eaſily ſeparated, after they have been macerated in Water a proper Time, for ſome Leaves require a much longer Time than others, to render the Parenchyma ſoft enough to ſeparate eaſily from the Veins without tearing them.

Theſe two Laminæ, or Orders of Veins, are ſuppoſed to be deſtined for different Purpoſes; the upper Lamina is thought to be Air Veſſels, or Tracheæ, through which the perſpiring Matter is protruded, and by which the Air is inſpired; that theſe are Pores through which that Subſtance paſſes, which is thrown out of the Plants, is pretty evident, for the clammy Subſtance which is commonly called Honey Dew, is always found ſticking to the upper Surface of Leaves, from whence many have ſuppoſed that this Subſtance fell from above, and lodged upon the Leaves in the Night. This is the Manna which is collected from Aſh Trees in *Calabria*, and from the *Albagi* in *Perſia*, &c. and is no other than the nutritive Juices, or a Subſtance ſeparated from that, which iſſues from the Pores of the Leaves, and is concreted on the Surface of the Leaves by the cold Air; but whenever this is found in Quantity upon the Leaves, it is a ſure Sign of a diſeaſed Plant.

The lower Lamina of Veins are ſuppoſed to be deſtined for another Purpoſe, which is that of receiving, preparing, and conveying the Moiſture imbibed from the riſing Vapours of the Earth, by which Trees and Plants are greatly nouriſhed; and for this Uſe we ſee how differently the two Surfaces are formed, the upper one is commonly ſmooth and lucid, and the under is frequently covered with Hairs, or a ſoft Down, the better to ſtop and detain the riſing Vapours, and tranſmit them to the inner Veſſels; and where the Structure of the Leaves are different, it is found by Experience, that their Functions alter; for thoſe Leaves, whoſe upper Surfaces are garniſhed with Down, or Hairs, are found to be the Receivers and Conveyers of the Moiſture, and not the under ones, as in the other Plants.

If the Surfaces of theſe Leaves are altered, by reverſing the Branches on which they grow, the Plants are ſtopped in their Growth, until the Foot Stalks are turned, and the Leaves recover their former Poſition. This ſhews how neceſſary it is to ſupport all thoſe weak Shoots of Plants, which are naturally diſpoſed for upright Growth, and that either twine about the neighbouring Trees for Support, or that put out Claſpers, by which they take hold of whatever Trees, or Plants grow near them, and are thereby ſupported; and, on the contrary, how abſurd is that Practice of tying up the Shoots of thoſe Plants which are naturally diſpoſed to trail upon the Ground, for, in both theſe Caſes, Nature is reverſed, and conſequently the Growth of both Sorts of Plants is greatly retarded.

This is one of the great Functions for which the Leaves of Trees and Plants are deſigned; but, beſides this, there are others of equal Importance to the well being of Plants and Fruits; the firſt is that of the Foot Stalks of Leaves nouriſhing and preparing the Buds of the future Shoots, which are always formed at the Baſe of theſe Foot Stalks, and during the Continuance of the Leaves in perfect Health, theſe Buds increaſe in their Magnitude, and, in the deciduous Trees, are brought to Maturity before the Foot Stalks ſeparate from the Buds in Autumn, but if by Accident the Leaves are blighted, or if the entire Surface of the Leaves are cut off, and the Foot Stalks are left remaining, yet the Buds will decay for Want of that proper Nouriſhment which is conveyed to them from the Leaves, ſo that whenever Trees are diveſted of their Leaves, or thoſe Leaves are cut, or otherwiſe impaired, though it may in either Caſe happen when the Buds may be nearly formed; yet if it is before the Foot Stalks ſeparate naturally from the Branches, the future Shoots will be weakened in Proportion to the Time when this is done; therefore as from all the Experiments which have been made in Order to know how ſerviceable the Leaves of Trees and Plants are to their well being, it has been found, that where the Plants have been diveſted of their Leaves, or their Leaves have been eaten, or cut, during their Growth, the Plants have been remarkably weakened thereby. This ſhould teach us not to pull, or cut off the Leaves of Trees, or Plants, on any Account, while they retain their Verdure, and are in Health. As alſo how abſurd that common Practice is, of feeding down Wheat in the Winter and Spring with Sheep; for by ſo doing, the Stalks are rendered very weak, and the Ears are in Proportion ſhorter, nor are the Grains of Corn ſo plump and well nouriſhed, as that which is not fed down upon the ſame Ground; this is a Fact which I can aſſert from many Years Experience, for when Corn, or Graſs, is fed down cloſe to the Root, the ſucceeding Blades will be much finer than if the firſt Leaves had been left remaining, which is evident from all Sheep Paſtures, where the Graſs is much finer and ſhorter than in other Places, as alſo upon Lawns and Bowling-greens, where the Graſs is often mowed, the Blades will be rendered finer in Proportion to the Frequency of mowing it, yet the Species of Graſs is the ſame with that on the richeſt Paſtures, ſo that although this may be a deſirable Thing for Lawns, *&c.* in Gardens, yet where Regard is had to the Produce, this ſhould be avoided.

Beſides theſe, theſe are other Uſes for which Leaves are deſigned, one of which is that of ſhading the Buds for the future Shoots from the Sun, which would exhale and dry up all their Moiſture, as alſo the ſhading of the young Fruit, which is abſolutely neceſſary during the Time of their Growth; for I have ſuſpended the Leaves of Trees which were growing againſt Walls, ſo as to expoſe the Fruit to the Sun, and not taken any of them off the Branches, yet I have always found thoſe Fruits ſo expoſed, have been greatly ſtinted in their Growth, and have never arrived to near the Size of others above and below them on the ſame Branches, nor were they ſo well taſted, or replete with Juice.

In making of this Experiment, I was as careful as poſſible not to reverſe the Surfaces of the Leaves, having been thoroughly convinced, from many repeated Experiments, how prejudicial that is to all Plants, but notwithſtanding this Precaution, the Event was as before mentioned.

Another principal Uſe of the Leaves is to throw off by Tranſpiration, what is unneceſſary for the Growth of the Plants, anſwering to the Diſcharge made by Sweat in Animal Bodies; and as Plants receive and tranſpire much more, in equal Time, than large Animals, ſo it appears how neceſſary the Leaves are to preſerve the Plants in perfect Health, for it has been found by the moſt exact Calculations, made from repeated Experiments, that a Plant of the Sun Flower receives and perſpires, in twenty-four Hours ſeventeen Times more than a Man.

As Naturaliſts have generally aſcribed a four-fold Uſe to Leaves, I ſhall beg Leave to mention them here, and then ſhall give an Account of the moſt accurate Experiments which have been made to aſcertain the Truth of their Hypotheſes.

1. Chiefly, that they do in the Spring Time receive the crude Humours into themſelves, divide them very minutely, and move them ſtrongly in the Utricles, and perhaps draw in from the Air what is neceſſary, though unknown to us, and carry back great Plenty of elaborated Juice to the Plant.

2. That there may be a Tranſpiration of what is unprofitable, anſwering to the Diſcharge made by Sweat; for ſometimes thoſe excretory Veſſels of the Leaves are ſo over-charged by the great Plenty of diſtending Humour [Juice,] that they burſt in the Middle, and let go the more ſubtile Parts; nor is it ſeldom, that, in a hot Seaſon, great Plenty of Juices are this Way diſcharged and imbibed. Thus Manna is found to exude (ſweat forth) from the Leaves of certain Trees, if a cold Night ſhould follow a hot Day; and the ſame Thing frequently happens in divers other Plants and Trees, as we learn from the Bees flying to the Lime Tree, that they may gather that gumous Subſtance from their Leaves, and it is from the Surfaces of the Leaves, as well as from the Flowers, thoſe Animals collect their Honey; but if the Heat ſhould be leſs, all the ſuperfluous Humours, except thoſe which, perhaps, are tranſmitted by inſenſible Tranſpiration through the arterial Veſſels, exhaling naturally, are ſeen to return into the Trunk.

3. That the bibulous Veſſels, dried by the diurnal Heat, and for this Reaſon to be compared to Veins, may imbibe, in the Night Time eſpecially, thoſe watry Parts, which, among others, lie hid in the Air under the Form of a very thin Dew, and ſo make Amends for the Loſs made by the Arteries, by the new Moiſture received.

4. Laſtly, the Leaf ſerves chiefly for this Purpoſe, that it may keep and nouriſh the Eye, or Gem, until the Gem, by Degrees growing out to a greater Bulk, preſſes together the Veſſels of the Foot Stalk, from whence the Humour is by little and little ſtopped in the Leaf, till it cannot any more return to the Foot Stalk, which, by the ceaſing of the Afflux and Reflux of the

nutritious Juice, grows putrid, whence a Conſumption being cauſed, the Leaf dies, and falls off, which is the chief Cauſe of the falling of the Leaves in Autumn.

The Rev. Dr. *Hales*, in his excellent Treatiſe of *Vegetable Staticks*, ſpeaking of the Perſpiration of Plants, gives an Account of the following Experiments, *viz.*

That in *July* or *Auguſt* he cut off ſeveral Branches of Apple Trees, Cherry Trees, Pear Trees, and Apricot Trees, two of a Sort; they were of ſeveral Sizes, from three to ſix Feet long, with proportional lateral Branches, and the tranſverſe Cut of the largeſt Part of the Stems was about an Inch Diameter.

That he ſtripped off the Leaves of one Bough of each Sort, and then ſet their Stems in ſeveral Glaſſes, pouring in known Quantities of Water.

The Boughs with Leaves on them imbibed ſome fifteen Ounces, ſome twenty, twenty-five, or thirty, in twelve Hours Day, more or leſs, in Proportion to the Quantity of Leaves they had, and when he weighed them at Night, they were lighter than in the Morning.

While thoſe without Leaves imbibed but one Ounce, and were heavier in the Evening than in the Morning, they having perſpired little.

The Quantity imbibed by thoſe with Leaves decreaſed very much every Day, the Sap Veſſels being probably ſhrunk at the tranſverſe Cut, and too much ſaturate with Water to let any more paſs, ſo that uſually in four or five Days the Leaves faded and withered much.

He adds, that he repeated the ſame Experiments with Elm Branches, Oak, Oſier, Willow, Sallow, Aſpen, Currant, Gooſeberry, and Filbert Branches, but none of theſe imbibed ſo much as the foregoing, and ſeveral Sorts of Ever-greens very much leſs.

He adds alſo another Experiment: That on the 15th of *Auguſt*, he cut off a large Pippin with two Inches Stem, and its twelve adjoining Leaves; that he ſet the Stem in a little Phial of Water, which imbibed and perſpired in three Days, one Third of an Ounce.

And that at the ſame Time he cut off from the ſame Tree another bearing Twig of the ſame Length, with twelve Leaves, no Apple on it, which imbibed in the ſame three Days near three Fourths of an Ounce,

That about the ſame Time, he ſet in a Phial of Water a ſhort Stem of the ſame Tree, with two large Apples on it, without Leaves, and they imbibed near three Fourths of an Ounce in two Days.

So in this Experiment, the Apples and Leaves imbibe four Fifths of an Ounce, the Leaves alone near three Fifths, but the two large Apples imbibed and perſpired but one third Part ſo much as the twelve Leaves, then the one Apple imbibed the one ſixth Part of what was imbibed by the twelve Leaves; therefore two Leaves imbibe and perſpire as much as one Apple: whence their perſpirations ſeem to be proportionable to their Surfaces, the Surface of the Apple being nearly equal to the Sum of the upper and under Surfaces of the two Leaves.

Whence it is probable, that the Uſe of theſe Leaves (which are placed juſt where the Fruit joins to the Tree) is to bring Nouriſhment to the Fruit.

And accordingly he obſerves, that the Leaves next adjoining to the Bloſſoms are in the Spring very much expanded, when the other Leaves on barren Shoots are but beginning to ſhoot, and that all Peach Leaves are very large before the Bloſſom goes off.

And that, in Apples and Pears, the Leaves are one Third, or half grown, before the Bloſſom opens, ſo provident is Nature in making timely Proviſion for the nouriſhing the yet Embryo Fruit.

He alſo adds another Experiment: He ſtripped the Leaves of an Apple Tree Branch, and then fixed the great End of the Stem in the Gage, it raiſed the Mercury $2 + \frac{1}{2}$ Inches, but it ſoon ſubſided, for Want of the plentiful Perſpiration of the Leaves, ſo that the Air came in almoſt as faſt as the Branch imbibed Water.

And as a farther Proof of the Influence of the Leaves in raiſing the Sap, he alſo made the following Experiment.

On the 6th of *Auguſt*, he cut off a large Ruſſet Pippin, with a Stalk $1. + \frac{1}{2}$ Inch long, and twelve adjoining Leaves growing to it.

He cemented the Stalk faſt in the upper End of a Tube, which Tube was ſix Inches long, and one Fourth Diameter; as the Stalk imbibed the Water, it raiſed the Mercury four Inches high.

That he fixed another Apple of the ſame Size in the ſame Manner, but firſt pulled off the Leaves, and it raiſed the Mercury but one Inch; that in the ſame Manner he fixed a like bearing Twig, with twelve Leaves on it, but no Apple, and it raiſed the Mercury three Inches.

He then took a like bearing Twig, without either Leaves or Apple, and it raiſed the Mercury one Fourth of an Inch.

So a Twig, with an Apple and Leaves, raiſed the Mercury four Inches; one with Leaves, only three Inches; one with an Apple without Leaves, only one Inch.

A Quince, which had two Leaves juſt at the Twig's Inſertion, raiſed the Mercury $2 + \frac{1}{2}$ Inches, and held it up a conſiderable Time.

A Sprig of Mint, fixed in the ſame Manner, raiſed the Mercury $3 + \frac{1}{2}$ Inches, $=$ to 4 Feet 5 Inches Height of Water.

Theſe, and many more Experiments of the Rev. Dr. *Hales*, that curious Enquirer into the Cauſes, State, and Progreſs of Vegetation, evidently ſhew the great Perſpiration of the Leaves of Plants, and their great Uſe in raiſing the Sap, and other Functions of vegetable Nature; to whoſe excellent Treatiſe before-mentioned I refer the curious Enquirer.

I ſhall add, That Nature has directed us as to the true Diſtance we ought to train the Branches of Trees againſt Walls or Eſpaliers, which ſhould always be in Proportion to the Size of their Leaves, for if we regard her Progreſs in the great Varieties of Trees, which are within our Obſervation, we ſhall always find their Branches grow diſtant from each other in Proportion to the Breadth of their Leaves; and it was upon this Account that the *Romans* ſo much admired the *Platanus*, becauſe the Leaves, being large, afforded them a kindly Shade in Summer, but in Winter, when they are deſtitute of Leaves, their Branches growing at a great Diſtance, eaſily admitted the Beams of the Sun.

I ſhall next beg Leave to mention a few, out of the many Experiments which have been made by Monſ. *Bonnet*, of *Geneva*, to prove that moſt Leaves imbibe the Moiſture of the Air on their under Surface, and not from their upper; they are as follow.

He gathered the Leaves of ſixteen Sorts of herbaceous Plants when fully grown, of each he put ſeveral Leaves upon the Surface of Water in Glaſs Vaſes, ſome were poſited with their upper Surface, and others with their under Surface upon the Water; theſe were adjuſted exactly to the Surface of the Water, with great Care not to let any Moiſture reach their oppoſite Surfaces, and the ſame Care was taken to prevent their Foot Stalks from receiving any Moiſture. The Glaſſes in which theſe Leaves were thus placed, were kept in a Cloſet, where the Air was very temperate; and as the Water in the Glaſſes evaporated, there was from Time to Time a Supply of freſh, which was added with a Syringe, ſo that the Leaves were not diſturbed. The Leaves were taken from the following Plants; the Plantain, the Mullein, the Wake Robin, the great Mallow, the Nettle, the Marvel of *Peru*, the Kidney Bean, the Sun Flower, the Cabbage, the Balm, the Cockſcomb, the purple leaved Amaranth, Spinach, and the ſmaller Mallow.

Six of theſe Sorts he found continued green a long Time, and theſe were with different Surfaces upon the Water, they were of the following Sorts, the Wake Robin, the Kidney Bean, the Sun Flower, the Cabbage, the Spinach, and ſmall Mallow; among the others the following Sorts were found to draw the Moiſture better with their upper Surface than their under, the Plantain, the Mullein, the great Mallow, the Nettle, the Cockſcomb, and the purple Amaranth.

The Leaves of the Nettle whoſe under Surface was upon the Water, were decayed in three Weeks, whereas thoſe whoſe upper Surface was next the Water continued two Months.

The Leaves of Mullein, whoſe under Surface was next the Water, did not continue freſh more than five or ſix Days, but thoſe whoſe upper Surface was next the Water laſted five Weeks.

The Leaves of the purple Amaranth, whoſe upper Surface was next the Water, continued freſh three Months, whereas thoſe whoſe under Surface was next the Water were decayed in a Week.

The Leaves of the Marvel of *Peru* and the Balm, appeared to have the Advantage, whoſe under Surfaces were next the Water.

The Leaves of Wake Robin and of the Cockſcomb, whoſe Foot Stalks only were put into the Water, continued freſh a longer Time, than thoſe which were placed with either Surface next the Water.

The Leaves of the Great Mallow, the Nettle, the Sun Flower, the Marvel of *Peru*, and Spinach, whoſe Foot Stalks were plunged in the Water, continued freſh a ſhorter Time, than thoſe which had either of their Surfaces next the Water.

The Leaves of the Mullein. of Plantain, and Amaranth, which received the Water at their Foot Stalk, continued freſh much longer than thoſe, whoſe under Surface was next the Water.

It is not difficult to explain the Reaſon of this Fact, for the Orifices of the Sap Veſſels in the Foot Stalk, are much larger than thoſe of either Surface, ſo that the Moiſture inſinuates in greater Quantities and with more Eaſe, the firſt than by the ſecond Way.

After this the ſame Gentleman made Experiments on the Leaves of ſixteen Sorts of Trees and Shrubs of the following Sorts, the Lilac, the Pear Tree, the Vine, the Aſpen, the Laurel, the Cherry Tree, the Plum Tree, the Horſe Cheſtnut, the White Mulberry, the Lime Tree, the Poplar, the Apricot, the Walnut, the Filbert, the Oak, and the Creeper.

Among theſe Species, he found that the Lilac and the Aſpen imbibed the Moiſture on their upper Surface, equally with the under Surface; but in all the other Sorts, the under Surface imbibed it in much greater Quantities than the oppoſite. The Difference was very remarkable in the Leaves of the White Mulberry, for thoſe whoſe upper Surface was laid upon the Water, faded in five Days, whereas the other whoſe under Surface was next the Water, preſerved their Verdure near ſix Months.

The Vine, the Poplar, and Walnut Tree, are very remarkable Inſtances, how little diſpoſed the upper Surfaces of the Leaves of ligneous Plants are to imbibe the Moiſture; for thoſe of theſe three Sorts, whoſe upper Surfaces were applied to the Water, decayed almoſt as ſoon as thoſe which had no Nouriſhment.

In all the Experiments made by this curious Gentleman upon the various Leaves of Trees and Herbs, it is remarkable, that all thoſe Leaves which imbibed the Moiſture by their upper Surface, were ſuch as had that Surface covered either with Hairs or Down; and on the contrary, where the under Surface was garniſhed with either Hairs or Down, the Moiſture was imbibed by that Surface. He likewiſe mentions many Experiments made by himſelf, and alſo by Monſ. *du Hamel de Monceau*, of the Royal Academy of Sciences at *Paris*, in rubbing the Leaves over with Varniſh, Oil, Wax, and Honey, to ſee the Effect of theſe upon various Leaves, ſome of which were rubbed over on both Surfaces, others only upon one; ſome only a Part of the Surface, others the Edges of the Leaves were rubbed over, and in ſome only the Foot Stalks of the Leaves were rubbed with theſe. They likewiſe anointed the Trunks of ſome Trees and Shrubs, and left the Leaves and Branches in their natural State.

The Reſult of theſe Experiments was, that where the Leaves were anointed on both Surfaces with Varniſh, they decayed preſently; and where they were anointed with the other Things, in Proportion as thoſe were moſt penetrating, ſo the Leaves continued a ſhorter Time than the others; and where one Surface only was anointed, they continued much longer than thoſe which were anointed on both; and where the Pedicle only was anointed they continued ſtill longer; but the anointing of the Trunks, made no ſenſible Alteration, excepting in very hot Weather; when they both imagine, that the anointing them was of Service, by hindering the too great Tranſpiration which might weaken the Trees; for they obſerved, that thoſe Trees which were varniſhed, ſuffered leſs from the violent Heat, than the Trees which were left in their natural State.

Monſ. *Bonnet* alſo obſerved, that on thoſe Leaves which were varniſhed, the tender Parts of the Leaves were deſtroyed by it, and the tough Fibres only were left remaining.

As it would ſwell this Work much beyond its intended Bulk, were I to mention more of theſe curious Experiments, I ſhall refer the Curious to his Book, where they will find a great Number of the moſt accurate and well conducted Experiments related, to aſcertain the Uſes of the Leaves of Plants in Vegetation.

The before-mentioned Rev. Dr. *Hales*, in his Treatiſe of *Vegetation*, ſays, It is plain from many Experiments and Obſervations he had before-mentioned, that Leaves are very ſerviceable in this Work of Vegetation, by being inſtrumental in bringing Nouriſhment from the lower Parts, within the Reach of the Attraction of the growing Fruit, which, like young Animals, is furniſhed with proper Inſtruments to ſuck it thence; but the Leaves ſeem alſo deſigned for many other noble and important Services, for Nature admirably adapts her Inſtruments, ſo as to be at the ſame Time ſerviceable to many good Purpoſes.

Thus the Leaves, in which are the many excretory Ducts in Vegetables, ſeparate and carry off the redundant watery Fluid, which, by being long detained, would turn rancid, and prejudicial to the Plant, leaving the more nutritive Parts to coaleſce; Part of which Nouriſhment, we have good Reaſon to think, is conveyed into Vegetables through the Leaves, which plentifully imbibe the Dew which contain Salt, Sulphur, &c.

For the Air is full of acid and ſulphureous Particles, which, when they abound much, do, by the Action and Reaction between them and the elaſtick Air, cauſe that ſultry Heat which uſually ends in Lightning and Thunder; and theſe new Combinations of Air, Sulphur, and acid Spirit, which are conſtantly forming in the Air, are doubtleſs, very ſerviceable in promoting the Work of Vegetation; when, being imbibed by the Leaves, they may not improbably be the Materials out of which the more ſubtile and refined Principles of Vegetables are formed; for ſo fine a Fluid as the Air ſeems to be a more proper Medium, wherein to prepare and combine the more exalted Principles of Vegetables, than the groſſer watery Fluid of the Sap: And for the ſame Reaſon it is likely, that the moſt refined and active Principles of Animals are alſo prepared in the Air, and thence conveyed through the Lungs into the Blood; and that there is Plenty of theſe ſulphureo-aereal Particles in the Leaves, is evident from the ſulphureous Exudations that are found in the Edges of Leaves, of which Bees are obſerved to make their waxen Cells, as well as of the Duſt of Flowers. And that Wax abounds with Sulphur, is plain from its burning freely, &c.

We may therefore reaſonably conclude, that one great Uſe of Leaves is what has been long ſuſpected by many, *viz.* to perform, in ſome Meaſure, the ſame Office for the Support of the vegetable Life, as the Lungs of Animals do for the Support of animal Life; Plants, very probably, drawing through their Leaves ſome Part of their Nouriſhment from the Air.

LEDUM. *Raii Syn.* 1.—142. *Lin. Gen. Pl.* 483. Marſh *Ciſtus*, or wild Roſemary.

The *Characters* are,

The Flower has a ſmall Empalement of 1 *Leaf, indented in* 5 *Parts. It hath* 5 *oval, concave, ſpreading Petals, and* 10 *ſlender Stamina the Length of the Petals, which ſpread open, terminated by oblong Summits, and a roundiſh Germen ſupporting a ſlender Style, crowned by an obtuſe Stigma. The Germen becomes a roundiſh Capſule with* 5 *Cells, opening at the Baſe in* 5 *Parts, and filled with ſmall, narrow, acute pointed Seeds.*

We have but one *Species* of this Genus, *viz.*

LEDUM *foliis linearibus ſubtus hirſutis, floribus corymboſis. Flor. Suec.* 341. *Ledum* with very narrow Leaves, hairy on their under Side, and Flowers growing in a Corymbus. *Roſmarinum ſylveſtre minus noſtras. Park. Hiſt.* 76. Our ſmall wild Roſemary.

This Plant grows naturally upon Moſſes and Bogs in many Parts of *Yorkſhire*, *Cheſhire*, and *Lancaſhire*, where it riſes with a ſlender ſhrubby Stalk about 2 Feet high, dividing into many ſlender Branches, garniſhed with narrow Leaves not much unlike thoſe of Heath. The Flowers are produced in ſmall Cluſters at the End of the Branches, which are ſhaped like thoſe of the Strawberry Tree, but ſpread open wider at the Top. Theſe are of a reddiſh Colour and appear in *May*, and in the natural Places of their Growth, are ſucceeded by Seed Veſſels filled with ſmall Seeds, which ripen in Autumn.

It is with great Difficulty this Plant is kept in a Garden, for as it naturally grows on Bogs, unleſs the Plants have ſome ſuch Soil and a ſhady Situation, they will not thrive. The Plants muſt be procured from the Places of their Growth, and taken up with good Roots, otherwiſe they will not live. They cannot be propagated in Gardens, but in the Moſſes their Roots ſpread and propagate pretty freely.

LEEKS. *See* Porrum.

LEGUMES, or LEGUMENS, are a Species of Plants which are called Pulſe, ſuch as Peas, Beans, &c. and are ſo called, becauſe they may be gathered by the Hand without cutting. Mr. *Ray* reckons all thoſe Plants which have a papilionaceous Flower, among the Legumes; but the *French* comprehend moſt Sorts of eſculent Plants, under this Title of Legumes.

LEGUMINOUS, of or belonging to Pulſe.

LEMON TREE. *See* Limon.

LENS. *See* Ervum.

LENS PALUSTRIS, Duck Meat. This is a very common Plant, growing on ſtanding Waters in moſt Parts of *England*; where, if it is not diſturbed, it will ſoon cover the whole Surface.

LENTISCUS. *See* Piſtacia.

LEONTICE. *Lin. Gen. Pl.* 381. *Leontopetalon. Tourn. Cor.* 49. *Tab.* 484. Lion's Leaf.

The *Characters* are,

The Empalement of the Flower is made up of 6 *very narrow Leaves, which are alternately ſmaller and drop off. The Flower has* 6 *oval acute Petals, twice the Length of the Empalement, and* 6 *Nectaria fixed by ſmall Foot Stalks to the Baſe of the Petals. It has* 6 *ſhort ſlender Stamina, terminated by erect Summits. In the Center is placed an oblong oval Germen, ſupporting a ſhort taper Style,* *inſerted obliquely to the Germen, crowned by a ſimple Stigma. The Germen becomes a globular ſwollen Berry a little ſucculent, with* 1 *Cell, incloſing* 2 *or* 3 *globular Seeds.*

The *Species* are,

1. LEONTICE *foliis pinnatis, petiolo communi ſimplici. Hort. Cliff.* 122. Lion's Leaf, with winged Leaves having 1 common ſingle Foot Stalk. *Leontopetalon foliis coſtæ ſimplici innaſcentibus. Tourn. Cor.* 49. Lion's Leaf with a ſingle Foot Stalk to the Leaves.

2. LEONTICE *foliis decompoſitis, petiolo communi trifido. Hort. Cliff.* 122. Lion's Leaf with decompounded Leaves, and a common trifid Foot Stalk. *Leontopetalon foliis coſtæ ramoſæ innaſcentibus. Tourn. Cor.* 49. Lion's Leaf, with a branching Foot Stalk to the Leaves.

Theſe Plants both grow naturally in the Iſlands of the *Archipelago*, and alſo in the Corn Fields about *Aleppo*, where they flower ſoon after *Chriſtmas*. They have large tuberous Roots, about the Size of thoſe of Cyclamen, covered with a dark brown Bark; the Leaves ariſe upon ſlender Foot Stalks immediately from their Roots, which grow about 6 Inches high; that of the firſt Sort is ſingle, having many ſmall Folioli ranged along the Mid-rib, but the Foot Stalks of the ſecond Sort are branched into 3 ſmaller; upon each of theſe are ranged ſeveral Folioli or ſmall Leaves, in the ſame Form as the winged Leaves. The Flowers ſit upon naked Foot Stalks, thoſe of the firſt Sort ſuſtain many yellow Flowers, but the Flowers of the ſecond are ſmaller and of a paler Colour. Theſe in their native Country appear ſoon after *Chriſtmas*, but in *England* they do not flower till the Beginning of *April*, and are never ſucceeded by Seeds here.

Both theſe Plants are propagated by Seeds, which require to be ſown ſoon after they are ripe, otherwiſe they ſeldom ſucceed; but as they are brought from diſtant Countries, they ſhould be preſerved in Sand to be ſent to *England*. I received a few of theſe Seeds from the Duke *D' Ayen*, which were ſent him from *Aleppo* put up in Sand, and theſe came up better than any of thoſe which came over dry; for of ſeveral Parcels of theſe Seeds which I have ſown of both Kinds the 3 laſt Years, I have not had more than 2 Plants ariſe.

The Plants are very difficult to preſerve in *England*, for the Roots will not thrive in Pots; and when they are planted in the full Ground, the Froſt frequently deſtroys them in Winter, eſpecially while the Roots are young. Of late Years the Winters have proved ſo very unfavourable, as to kill all the young Roots which I had raiſed in the *Chelſea* Garden; but before the ſevere Winter in 1740, I had ſome of the Roots which were planted in a South-weſt Border, that flowered ſeveral Years, and without any Shelter ſurvived the Winters; but although I covered many of thoſe Roots which I had lately raiſed, yet I could not preſerve them.

The Leaves of theſe Plants decay about *Midſummer*, and the Roots remain in an unactive State till the following Spring, at which Time the Flowers and Leaves come up nearly at the ſame Time.

When the Seeds are procured from Abroad, the beſt Way is to ſow them as ſoon as they arrive, and cover them with Glaſſes in the Winter to protect them from Froſt; and in the Spring, when the Plants begin to appear, they muſt have the free Air admitted to them at all Times when the Weather is mild, otherwiſe they are very ſubject to draw up tall with weak Stems, and their Roots do not increaſe in their Bulk. If the Plants are not too cloſe, it will be beſt to let them remain in the Place unremoved till the ſecond Year; but where they are too cloſe, Part of the Roots may be taken up in *October*, and tranſplanted cloſe to a warm Wall, being very careful not to diſturb the Roots which are left ſtanding; and in *November*, before the hard Froſt ſets in, it will be a good Way to lay ſome old Tanners Bark over the Surface of the Ground, 3 or 4 Inches thick, to prevent the Froſt from penetrating to the Roots; but this ſhould be moſt of it taken off in *March* before the Roots begin to puſh out their Leaves; and if this is removed in Part ſoon after the hard Froſt is over in *February*, and another Part three Weeks or a Month after, it will be better than taking it all off at the ſame Time; and if a thin Covering of the Tan is left at the laſt over the Surface of the Ground, it will prevent the drying Winds of the Spring from drying the Ground, which will be of great Service to the Roots. Theſe Roots ſhould have a dry looſe Soil, and muſt be ſeldom removed, but when that is done, *October* is the beſt Time, for then the Roots are inactive.

LEONTODON. *Lin. Gen. Pl.* 817. *Dens leonis. Tourn. Inſt. R. H.* 468. Dandelion; in *French*, *Dent de Lion.*

There are four or five Species of this Genus, which grow naturally in the Fields, ſo are not cultivated in Gardens; but ſome People in the Spring gather the Roots out of the Fields, and blanch them in their Gardens for a Sallad Herb; however, as they are not cultivated, I ſhall forbear ſaying any Thing more of them, than that they are very bad Weeds both in Gardens and Fields, ſo ſhould be rooted out before their Seeds are ripe, otherwiſe they will ſpread to a great Diſtance, as they have Down adhering to them, by which they are wafted about by the Wind.

LEONTOPODIUM. *See* Plantago.

LEONURUS. *Tourn. Inſt. R. H.* 187. *Tab.* 87. *Phlomis. Lin. Gen. Pl.* 642. Lion's Tail.

The *Characters* are,

The Flower has a tubulous, 5 *cornered, permanent Empalement of* 1 *Leaf; the Flowers have one Petal, and are of the Lip Kind; the upper Lip is long, cylindrical, hairy, and entire; the lower Lip is ſhort, reflexed, and cut into* 3 *Parts. It hath* 4 *Stamina ſituated under the lower Lip,* 2 *of which are ſhorter than the other; theſe are terminated by oblong compreſſed Summits. In the Bottom of the Tube are ſituated* 4 *Germina ſupporting a ſlender Style, ſituated with the Stamina, and crowned by a bifid acute Stigma. The Germina become* 4 *oblong angular Seeds, ſitting in the Empalement.*

The *Species* are,

1. LEONURUS *foliis lanceolatis, obtuſè ſerratis. Hort. Cliff.* 312. Lion's Tail with Spear-ſhaped Leaves, which are bluntly ſawed. *Leonurus perennis Africanus, ſideritidis folio, flore Phœnicio majore. Breyn. Cent.* 1. 171. Pe-

rennial *African* Lion's Tail with an Ironwort Leaf, and a larger ſcarlet Flower.

2. LEONURUS *foliis ovatis, calycibus decagonis, ſeptem dentatis, inæqualibus. Hort. Cliff.* 312. Lion's Tail with oval Leaves, an Empalement having 10 Corners and 7 unequal Indentures. *Leonurus minor, Capitis Bonæ Spei, vulgò. Boerh. Ind. alt.* 180. Small Lion's Tail of the *Cape of Good Hope.*

The 1ſt Sort is a Native of *Ethiopia*, but has been long cultivated in the *Engliſh* Gardens. This riſes with a ſhrubby Stalk, 7 or 8 Feet high, ſending out ſeveral Branches from the Side, which are four cornered; theſe are garniſhed with oblong narrow Leaves, acutely indented on their Edges; they are about 3 Inches long, and half an Inch broad, hairy on their upper Side, and veined on their under, ſtanding by Pairs oppoſite. The Flowers are produced in Whorls round the Branches, each of the Branches having 2 or 3 of theſe Whorls toward their Ends, ſitting very cloſe to the Branches; they are of the Lip Kind, ſhaped ſomewhat like thoſe of the dead Nettle, but much longer and covered over with ſhort Hairs; they are of a golden ſcarlet Colour, ſo make a fine Appearance. The Flowers commonly appear in *October* and *November*, and ſometimes continue till the Middle of *December*, but are not ſucceeded by Seeds here.

There is a Variety of this Sort with variegated Leaves, which is by ſome admired; but as this ſeldom produces ſo large Whorls of Flowers as the plain Sort, it is not generally eſteemed.

The 2d Sort is mentioned by ſeveral Authors as an annual Plant; they alſo ſuppoſe it to be a Native of *America*, and believe it was brought from *Surinam* to *Holland*; but it is undoubtedly a Native of the *Cape of Good Hope*, from whence I have two or three Times received the Seeds; and the late Dr. *Boerhaave* aſſured me, that he had frequently received the Seeds from that Country, as alſo a Painting of the Plant, ſo that he made no Doubt of the Plant growing naturally there.

This riſes with a ſquare ſhrubby Stalk about 3 Feet high, ſending out ſeveral four cornered Branches, garniſhed with oval crenated Leaves, rough on their upper Side like the dead Nettle, but veined on the under, which is of a pale green; theſe are placed oppoſite by Pairs, as are alſo their Branches. The Flowers come out in Whorls round the Branches, in like Manner as the former, but are not ſo long nor ſo deep coloured; they appear at the ſame Seaſon with the firſt, and continue as long in Beauty.

Both theſe Sorts are propagated by Cuttings in *Europe*, for they do not produce any Seeds here. If the Cuttings are planted in *July*, after the Plants have been ſo long expoſed to the open Air as to harden the Shoots, they will take Root very freely. They ſhould be planted in a loamy Border to an Eaſt Aſpect, and if they are covered cloſely with a Bell or Hand Glaſs to exclude the Air, and ſhaded from the Sun, it will forward their putting out Roots; but when they begin to ſhoot, the Glaſſes ſhould be raiſed to admit the free Air, to prevent their drawing up weak, and by Degrees they muſt be expoſed to the open Air. As ſoon as they have taken good Root, they muſt be taken up, and each planted in a ſeparate Pot filled with ſoft loamy Earth, and placed in the Shade till they have taken new Root; then they may be removed to a ſheltered Situation, where they may remain till *October*, when they muſt be removed into the Green-houſe, and afterward treated as the Myrtle, and other hardy Green-houſe Plants, obſerving to water the firſt Sort plentifully.

LEPIDIUM. *Tourn. Inſt. R. H.* 215. *Tab.* 103. *Lin. Gen. Pl.* 718. Dittander, or Pepperwort.

The *Characters* are,

The Empalement of the Flower is compoſed of 4 oval concave Leaves, which fall off. The Flower has 4 oval Petals placed in the Form of a Croſs, which are much larger than the Empalement, and 6 Awl-ſhaped Stamina the Length of the Empalement, 2 of which are ſhorter than the other, terminated by ſingle Summits. In the Center is ſituated a Heart-ſhaped Germen, ſupporting a ſingle Style, crowned by an obtuſe Stigma. The Germen turns to a Spear-ſhaped Seed Veſſel with 2 Cells, divided by an intermediate Partition, containing oblong Seeds.

The *Species* are,

1. LEPIDIUM *foliis ovato-lanceolatis integris ſerratis. Hort. Cliff.* 330. Dittander with entire, oval, Spear-ſhaped Leaves, which are ſawed. *Lepidium latifolium. C. B. P.* 97. Broad leaved Dittander.

2. LEPIDIUM *foliis lanceolatis amplexicaulibus dentatis. Hort. Cliff.* 331. Dittander with Spear-ſhaped indented Leaves, which embrace the Stalks. *Lepidium humile, incanum, arvenſe. Tourn. Inſt. R. H.* 216. Low hoary Dittander of the Fields.

3. LEPIDIUM *foliis lineari-lanceolatis ſubdentatis amplexicaulibus radice reptatrice.* Dittander with narrow Spear-ſhaped Leaves a little indented, which embrace the Stalk, and a creeping Root. *Lepidium humile minùs incanum, Alepicum. Tourn. Inſt.* 216. Low Dittander of *Aleppo* with leſs hoary Leaves.

4 LEPIDIUM *floribus diandris tetrapetalis, foliis inferioribus lanceolatis ſerratis, ſuperioribus linearibus integerrimis. Flor. Leyd. Prod.* 334. Dittander with Flowers having 4 Petals and 2 Stamina, whoſe under Leaves are Spear-ſhaped and ſawed, and the under one narrow and entire. *Lepidium gramineo folio ſive Iberis. Tourn. Inſt.* 216. Dittander with a Graſs Leaf, or Iberis.

5. LEPIDIUM *foliis caulinis pinnato-multifidis, ramiferis cordatis, amplexicaulibus integris. Hort. Cliff.* 331. Dittander with the lower Leaves Wing-pointed, and thoſe on the Branches Heart-ſhaped, entire, and embracing the Stalks. *Thlaſpi verum Dioſcoridis.* 1. *Zan. Hiſt.* 193. The true Mithridate Muſtard of *Dioſcorides.*

6. LEPIDIUM *floribus ſubtriandris tetrapetalis, foliis linearibus pinnatis. Lin. Gen. Pl.* 645. Dittander with Flowers having 4 Petals, and chiefly with 3 Stamina, and very narrow winged Leaves. *Iberis humilior annua Virginiana ramoſior. Mor. Hiſt.* 2. p. 311. Lower annual branching Sciatica Creſs of *Virginia.*

7. LEPIDIUM *foliis lyratis criſpis. Lin. Sp. Pl.* 644. Dittander with curled Lyre-ſhaped Leaves. *Lepidium Orientale naſturtii criſpi folio. Tourn. Cor.* 15. Eaſtern Dittander, with a Leaf like curled Creſs.

The 1ſt Sort grows naturally in moiſt Places in many Parts of *England*, ſo is ſeldom cultivated in Gardens It hath ſmall white creeping Roots, by which it multiplies very faſt, ſo as to render it difficult to eradicate the Plant, after it has grown long in any Place; the lower Leaves are oval, Spear-ſhaped, about 3 Inches long, and one and a Half broad toward the Baſe, ſawed on the Edges, and ſtanding on long Foot Stalks. The Stalks riſe 2 Feet high, they are ſmooth, and ſend out many Side Branches; the Leaves on the Stalks are longer, narrower, and more acute pointed than the lower, and are not ſawed on their Edges. The Flowers grow in cloſe Bunches toward the Top of the Branches, coming out from the Side; they are ſmall, and are compoſed of 4 ſmall white Petals. Theſe appear in *June* and *July*, and the Seeds ripen in the Autumn. The whole Plant has a hot biting Taſte like Pepper, and the Leaves have been often uſed by the Country People to give a Reliſh to their Viands inſtead of Pepper; from whence it had the Appellation, of poor Man's Pepper.

This Plant is eaſily propagated, for every Piece of the Root will grow and multiply where-ever it is planted, ſo will become troubleſome to root out after growing for ſome Time in a Garden. The Leaves of this Plant bruiſed and mixed with Hog's Lard, and applied as a Cataplaſm to the Hip, help the Sciatica; and chewed in the Mouth, cauſe a great Defluxion of Rheum, ſo is ſaid to help ſcrophulous Tumours in the Throat.

The 2d Sort grows naturally in *Auſtria* and *Italy*; this hath a fleſhy fibrous Root, from which ariſe ſeveral weak Stalks about a Foot and a Half high, garniſhed with Spear-ſhaped Leaves, 3 Inches long and one and a Half broad, deeply cut in upon the Edges; theſe are ſmooth, a little hoary, and embrace the Stalks with their Baſe; the Flowers are ſmall, white, and grow in looſe Bunches at the End of the Branches. They flower from *June* till the Beginning of *September*, and the Seeds ripen in Autumn.

This is a perennial Plant, which propagates very faſt by its Roots, and is ſeldom admitted into Gardens.

The 3d Sort grows naturally about *Aleppo*; this hath creeping Roots, which extend to a great Diſtance on every Side, ſo will ſoon ſpread over a large Piece of Ground. The Leaves of this are longer and narrower than thoſe of the former, and are leſs hoary; the Flowers grow in looſe Bunches at the End of the Branches, they are ſmall and white like thoſe of the firſt. This is a hardy perennial Plant, which propagates by its creeping Roots in as great Plenty as either of the former.

The 4th Sort grows naturally in the South of *France*, *Italy*, and *Sicily*, but is preſerved in ſome *Engliſh* Gardens for Variety. This hath a long fleſhy Root, which runs deep into the Ground, and ſends out many oblong Leaves which are ſawed on their Edges, and ſpread flat on the Ground; the Stalks are ſlender, ſtiff, and branch out horizontally on every Side; they riſe about 2 Feet high, and are garniſhed with very narrow entire Leaves. The Flowers come out in cloſe ſmall Cluſters at the End of the Branches, they are very ſmall and white, and appear in *June* and *July*, and the Seeds ripen in Autumn. If theſe Seeds are permitted to ſcatter, the Plants will come up early in the Spring, and require no other Care but to keep them clean from Weeds; the Roots will abide ſeveral Years, if they are in a dry Soil. This Plant is alſo commended for its Virtues in Sciaticas, if bruiſed and mixed with Hog's Lard as the firſt, and from its Virtues it obtained the Title of Sciatica Creſs.

The 5th Sort grows naturally in *Spain*; this hath a low ſlender Stalk, which is a little ligneous, ſending out ſeveral ſlender Branches, which riſe about a Foot high, garniſhed with very narrow Awl-ſhaped Leaves, growing ſparſedly along the Branches; they are of a grayiſh Colour; and a little hairy. The Flowers are produced in looſe Bunches from the Side and at the Top of the Stalk; they are ſmall and white, appearing in *June* and *July*, and the Seeds ripen in Autumn; but the Plants will abide ſeveral Years if they are in a dry Soil, and reſiſt the Cold of our ordinary Winters very well.

If the Seeds of this Sort are ſown in Spring, on a Border of light Earth, the Plants will come up in 5 or 6 Weeks, when they muſt be kept clean from Weeds; and where they are too cloſe, they ſhould be thinned, leaving them about 6 Inches apart, after which they will require no other Care. A few of theſe Plants by Way of Variety may have Place, but having little Beauty, few People care to admit them into Gardens.

The 6th Sort grows naturally in *Perſia* and *Syria*; this is ſuppoſed to be the true Mithridate Muſtard of *Dioſcorides*. It is an annual Plant, whoſe lower Leaves are winged, and finely cut into many Segments; the Stalks riſe a Foot high, dividing into many ſlender Branches, garniſhed with Heart-ſhaped Leaves that are entire, and embrace the Stalks with their Baſe. The Flowers grow in long looſe Spikes from the End of the Branches, they are ſmall and yellow, and appear in *June* and *July*, and the Seeds ripen in *September*, ſoon after which the Plant decays.

The Seeds of this Plant ſhould be ſown in the Autumn, for thoſe which are ſown in the Spring, ſeldom flower the ſame Year, and are often killed by the Froſt in Wintet; whereas thoſe ſown in the Autumn, or the Plants that riſe from ſcattered Seeds, will always flower about *Midſummer*, and their Seeds ripen the *September* following. The Plants require no other Care but to thin them, and keep them clean from Weeds.

The 7th Sort is an annual Plant, which grows naturally in *Virginia*, and alſo in all the Iſlands of the *Weſt-Indies*, where the Inhabitants gather the Leaves, and eat them in their Sallads as we do the Garden Creſs.

The lower Leaves of this Sort are 3 Inches long and 1 broad, ſawed on their Edges, and of a light green, with a biting Taſte like Creſs. The Stalk riſes a Foot and a Half high, ſending out a great Number of ſmall Side Branches, garniſhed with narrow Leaves regularly ſawed on their Edges, ſo as to reſemble winged Leaves; theſe ſit cloſe to the Branches. The Flowers are produced at the End of the Branches in looſe Spikes, they are ſmall and white, and are ſucceeded by roundiſh or

Heart-ſhaped compreſſed Seed Veſſels, which have a Border round them. It flowers in *June* and *July*, and the Seeds ripen in Autumn; this Sort is eaſily propagated by Seeds, which may be ſown on an open Bed in *April*, where the Plants are deſigned to remain, and when they come up, they will require no other Care, but to thin them where they are too cloſe, and keep them conſtantly clean from Weeds; or if the Seeds are permitted to ſcatter in Autumn, the Plants will come up very well, and may be treated as the other.

The 8th Sort grows naturally in *Aſia*, and alſo in *Spain*, from whence I have received the Seeds. This is a biennial Plant, the lower Leaves which ſpread on the Ground, are near 2 Inches long, and about half an Inch broad, indented on both Sides in Shape of a Lyre, and curled on the Edges; the Stalks riſe a Foot high, and divide into a great Number of ſlender Branches, garniſhed with ſmall oblong Leaves, cut on their Sides, and a little curled on their Edges; the Stalks and Leaves are of a gray Colour, inclining toward Hoarineſs. The Flowers are produced in Cluſters at the End of the Branches; they are very ſmall and white, appearing in *July*, and are ſucceeded by roundiſh bordered Seed Veſſels which are compreſſed, and have 2 Cells each, containing 2 ſmall oblong Seeds, which are ripe in the Autumn.

This Sort may be propagated by Seeds, as the former; or if the Seeds are permitted to ſcatter in Autumn, the Plants will come up without Care, and ſhould be treated as the former Sort; but this does not flower till the ſecond Year, ſo the Plants ſhould be left farther aſunder.

All theſe Sorts are preſerved in Botanick Gardens for Variety, but are rarely to be ſeen in other Gardens, becauſe they have no great Beauty, nor are they of much Uſe at preſent.

LEPIDOCARPODENDRON. *See* Protea.

LETTUCE. *See* Lactuca.

LEUCANTHEMUM. *See* Anthemis.

LEUCOJUM. *Lin. Gen. Pl.* 363. *Narciſſo-leucojum. Tourn. Inſt. R. H.* 387. *Tab.* 208. Snow-drop; in *French*, *Perce-neige*.

The *Characters* are,

It hath an oblong, obtuſe, compreſſed Spatha or Sheath, which opens on the Side. The Flower is of the ſpreading Bell Shape, cut into 6 Parts, which join at their Baſe. It hath 6 ſhort briſtly Stamina, terminated by oblong, obtuſe, four cornered Summits, which are erect. The roundiſh Germen is ſituated under the Flower, ſupporting a Style which is thick and obtuſe at the Top, crowned by an erect briſtly Stigma. The Germen becomes a turbinated Capſule with 3 Cells, opening with 3 Valves, and filled with roundiſh Seeds.

The *Species* are,

1. LEUCOJUM *ſpathâ uniflorâ, ſtylo clavato. Lin. Sp. Pl.* 289. Snow-drop with a Sheath incloſing one Flower, with a Key-ſhaped Style. *Narciſſo-leucojum vulgare. Tourn. Inſt. R. H.* 387. Common great Snowdrop.
2. LEUCOJUM *ſpathâ multiflorâ, ſtylo filiformi. Lœfl. Lin. Sp. Pl.* 289. Snowdrop with many Flowers in a Sheath, and a Thread-like Style. *Narciſſo-leucojum pratenſe multiflorum. Tourn. Inſt. R. H.* 387. Meadow Snowdrop with many Flowers, commonly called the all late Snowdrop.

The 1ſt Sort grows naturally in *Switzerland* and *Germany*, as alſo on the Mountains near *Turin*. This hath an oblong bulbous Root, ſhaped like that of the Daffodil, but ſmaller; the Leaves are flat, of a deep green, four or five in Number, broader than thoſe of the ſmall Snowdrop; between theſe ariſe an angular Stalk near a Foot high, which is naked, hollow, and channelled; toward the Top comes out a Sheath which is whitiſh, opening on the Side, out of which come one, or ſometimes two white Flowers, hanging on ſlender Foot Stalks; theſe have but 1 Petal, cut into 6 Parts almoſt to the Bottom. Theſe are much larger than thoſe of the ſmall Snowdrop, and the Ends of the Segments of the Petal are tipped with green, where they are of a thicker Subſtance than in any other Part. Theſe Flowers appear in *March*, ſoon after thoſe of the ſmall Sort; they have an agreeable Scent, not much unlike that of the Flowers of Hawthorn; after the Flower is paſt, the Germen which is ſituated below the Flower, ſwells to a Pear-ſhaped Capſule with 3 Cells, incloſing ſeveral oblong Seeds.

The Leaves of this Sort decay toward the End of *May*, after which Time the Roots may be taken up and tranſplanted, for they ſhould not be long kept out of the Ground. It is propagated here by Offſets, which the Roots put out pretty plentifully when they are in a Situation agreeable for them, and when they are not too often removed. They ſhould have a ſoft, gentle, loamy Soil, and an Expoſure to the Eaſt; the Roots ſhould be planted 6 Inches aſunder, and 4 or 5 Inches deep, and muſt not be tranſplanted oftener than every third Year.

The 2d Sort is generally known by the Title of late, or tall Snowdrop; this grows naturally in the Meadows near *Piſa* in *Italy*, in *Hungary*, and alſo near *Montpelier*.

The Root of this Sort is near as large as that of the common Daffodil, and is very like it in Shape; the Leaves are alſo not unlike thoſe of the Daffodil, and are more in Number than thoſe of the other Sort; they are green, and Keel-ſhaped at the Bottom, where they fold over each other and embrace the Stalk, which riſes a Foot and a Half high, and at the Top is ſituated a Spatha (or Sheath) which opens on one Side, and lets out 3 or 4 Flowers, which hang downward, on pretty long Foot Stalks; theſe are cut into 6 oval concave Segments almoſt to the Bottom, and are of a clear white, with a large green Tip to each Segment, which is of a thicker Conſiſtence than any other Part of the Petal; within are ſituated 6 Awl-ſhaped Stamina, with oblong yellow Summits, ſtanding erect round a very ſlender Style, crowned by an obtuſe Stigma. Theſe Flowers appear the latter End of *April* or Begining of *May*, and as all the Flowers in each Sheath do not come out together, but following each other, there is a Succeſſion of them for 3 Weeks or longer, in cool Weather. The Flowers are ſucceeded by large triangular Seed Veſſels, having 3 Cells, each containing 2 Rows of Seeds.

This Sort is generally propagated in *England* by Offſets, for the Plants raiſed by Seeds will not come to flower in leſs than 4 Years; and as the Roots put out Offſets in Plenty, it is the more expeditious Method. Theſe Roots may be treated as the firſt Sort, and ſhould have a ſoft loamy Soil, and be expoſed only to the Morning Sun, where they will flower ſtronger and continue longer in Beauty, than when they are in an open Situation, though they will thrive in almoſt any Soil or Situation.

LEUCOJUM INCANUM. } *See* Cheiranthus.
LEUCOJUM LUTEUM. }
LEUCOJUM BULBOSUM. *See* Galanthus.

LEVEL, a mathematical Inſtrument ſerving to draw a Line parallel to the Horizon, not only for various Uſes in Maſonry, *&c.* but alſo to meaſure the Difference of Aſcent and Deſcent between ſeveral Places, for the conveying of Water, draining of Fens, *&c.*

A Water Level ſhews the horizontal Line, by Means of a Surface of Water, or other Liquid, founded on this Principle, That Water always naturally places itſelf level.

The moſt ſimple Inſtrument for this Uſe is made of a long wooden Trough, or Canal, whoſe Sides are parallel to its Baſe, ſo that, being equally filled with Water, the Surface thereof ſhews the Line of Level.

This Level is alſo made with two Cups fixed to the two Ends of a Pipe 3 or 4 Feet long, about an Inch in Diameter, by Means whereof, the Water communicates from the one to the other Cup, and this Pipe being moveable on its Stand, by Means of a Ball and Socket, when the 2 Cups become equally full of Water, the two Surfaces mark the Line of Level.

Inſtead of Cups, this Inſtrument may be made with two ſhort Cylinders of Glaſs 3 or 4 Inches long, faſtened to each End of the Pipe with Wax or Maſtich, then the Pipe, being filled either with common, or coloured Water, will ſhew itſelf through the Cylinder, by Means of which the Line of Level is determined, the Heighth of the Water, with Reſpect to the Center of the Earth, being always the ſame in both Cylinders. This Level is very commodious in levelling ſmall Diſtances.

If you would level any Piece of Ground that you can ſee from Side to Side, or from the Middle to any Side, ſet up your Inſtrument in the Middle of it, whether it be a Water Level, or a Ground Level with Sights; place it ſo high, that you may ſee over the higheſt Part of the Ground half a Foot, or a Foot; then ſet up a Stake in the Middle, ſo that the Top may be exactly level with the Sights, and another Stake on the higheſt Side, the Top of which muſt be level with the middle Stake; then either turn the Level, or Look-back Sight, and ſet up another Stake on the lower Ground level with the two firſt, then you will have three Stakes ſtanding in a Level.

Then keeping your Level true to the middle Stake, turn it till it makes right Angles with the three Stakes, and ſet up two Stakes on each Side one Level with thoſe three, then you will have five Stakes in two Lines ſet true Level.

If the Ground be large, you may ſet up two Rows more by the Level, but five Stakes are enough in a ſmall Ground.

When this is done, you may lay your Level aſide, and look over the Head of one to the Head of another, and cauſe the Perſon who aſſiſts you to put down Stakes between two and two, till you have ſet as many Stakes level in the Ground as you think convenient, or you may uſe a Rule, which being placed level with the Head of the Stake, you may look over that to the Head of the other, and put Stakes down between you and the other Stake, to what Number you pleaſe.

The Ground being thus ſtaked out with all the Stakes Heads level, and half a Foot higher than the higheſt Ground, in ſome Grounds the middle Stake, and the Stakes in the Croſs Line, will be the Level Line the Ground muſt be brought to, that is, abating the Hill, and filling up the low Side to the Level of the Mid-line. But if the Ground be very uneven, then you muſt meaſure over all the Stakes, and take them Middle high for their mean Level, and, by the Rule of Three, proportion your Ground to that.

As for Inſtance: If a Valley be ten Poles in Length, and two Feet in Depth from the ſtrait Line, and there be a Hill five Poles long; How many Feet deep muſt a Perſon ſink thoſe five Poles to fill up the Valley? This Queſtion may be reſolved by the Inverſe or Back Rule of Three, and will ſtand thus: As 5 to 2, ſo is 10 to 4.

5——2——10
2
————
5)20(4

So that a Perſon muſt go four Feet deep in ſuch a Hill to make good ſuch a Valley.

If you are to abut the Top of the Hill four Feet deep, and two Poles from the Top of that Hill, thoſe four Feet are to come out.

To perform this, ſet up a Stake on the Top of a Hill two or three Feet above Ground, and another of the ſame Height where the Depth comes out, ſet down a Stake three Rods from that, till the Head comes to be in a Line with theſe two, and at that Stake you muſt be one Foot deep.

At ſix Poles ſtake down another as before, and there you muſt be two Feet deep; then ſtake down another at nine Poles, and there you muſt be three Feet deep, and you may ſet more Stakes at equal Diſtances, which will direct you ſo as that you cannot go amiſs.

LICHEN. Liverwort.

There being two Sorts of this Plant, uſed in Medicine, and one of thoſe being accounted a ſovereign Remedy for the Bite of mad Dogs, I thought it would not be improper to mention them here, though they are Plants which cannot be propagated by any Methed, except by paring up the Turf of Graſs whereon they grow, and laying it down in ſome moiſt ſhady Place, where, if the Turf takes Root, and thrives, theſe Plants will ſpread, and do well. The two *Sorts* are,

1. LICHEN *petræus latifolius, ſive Hepatica fontana. C. B. P.* Common broad leaved Liverwort.

2. LICHEN *terreſtris cinereus. Raii Syn.* Aſh-coloured Ground Liverwort.

The 1ſt Sort grows on the Sides of Wells, and in moiſt ſhady Places, not only on the Ground, but on Stones, Bricks, or Wood. Of this there are ſeveral Varieties, which are diſtinguiſhed by the Curious in Botany; but as they are Plants of no Uſe, I ſhall not enumerate them.

The 2d Sort (which is uſed to cure the Bite of mad Dogs) grows on Commons, and open Heaths, where the Graſs is ſhort, in moſt Parts of *England*, eſpecially on

Declivities, and on the Sides of Pits. This ſpreads on the Surface of the Ground, and, when in Perfection, is of an Aſh Colour, but as it grows old, it alters, and becomes of a dark Colour. This is often carried into Gardens with the Turf which is laid for Walks and Slopes, and where the Soil is moiſt and cool, it will ſpread, and be difficult to deſtroy, ſo that it renders the Graſs unſightly; but this is the only Method yet known to have it grow in Gardens, where it is deſired.

This is eſteemed a ſovereign Remedy for the Bite of mad Dogs, and hath been for many Years uſed with great Succeſs. It was communicated to the Royal Society by Mr. *George Dampier*, whoſe Uncle had long uſed this Plant, to cure the Bite of mad Dogs on Men and Animals, with infallible Succeſs. The Method of taking it he has delivered as followeth: “Take of the “Herb, and dry it either in an Oven, by the Fire, or “in the Sun; then powder it, and paſs it through a “fine Sieve; mix this with an equal Quantity of fine “powdered Pepper. The common Doſe of this Mix-“ture is four Scruples, which may be taken in warm “Milk, Beer, Ale, or Broth.” He alſo adviſes, that the Part bitten be well waſhed, as alſo the Clothes of the Perſon who is bit, leſt any of the Snivel, or Drivel, of the mad Dog ſhould remain. If the Perſon bitten be full grown, he adviſes, that he be blooded before the Medicine is taken, and to uſe the Remedy as ſoon after the Bite as poſſible, as alſo to repeat the Doſe two or three ſeveral Mornings faſting.

LIGUSTICUM. *Tourn. Inſt. R. H.* 323. *Tab.* 171. *Lin. Gen. Pl.* 308. [takes its Name of *Liguria*, becauſe this Plant, in old Time, grew in greateſt Plenty near a River of *Genoa*, called *Liguria*.] Lovage; in *French*, *Livêche*.

The *Characters* are,

It hath an umbellated Flower. The general Umbel is compoſed of ſeveral ſmaller, which are alſo compoſed of other very ſmall Umbels. The general Umbel has an Involucrum compoſed of 7 unequal Leaves. The Perianthium of the Flower is indented in 5 Parts, ſitting upon the Germen. The Flower hath 5 equal Petals, inflexed at their Points, and Keel-ſhaped within. It hath 5 hairy Stamina, ſhorter than the Petals, terminated by ſimple Summits. The Germen, which is ſituated under the Flower, ſupports 2 ſimple Styles, crowned by ſimple Stigmas. The Germen turns to an oblong Fruit, divided into 2 Parts, which is angular, and channelled, containing 2 oblong ſmooth Seeds.

The *Species* are,

1. LIGUSTICUM *foliis multiplicibus, foliolis ſupernè inciſis. Hort. Cliff.* 97. Lovage with many Leaves, whoſe Lobes are cut toward the Top. *Leviſticum vulgare. Mor. Hiſt.* 3. p. 275. Common Lovage.

2. LIGUSTICUM *foliis biternatis. Lin. Sp. Pl.* 250. Lovage with double trifoliate Leaves. *Liguſticum Scoticum Apii folio. Tourn. Inſt. R. H.* 324. *Scotch* Lovage with a Smallage Leaf.

3. LIGUSTICUM *foliis bipinnatis, foliolis confluentibus inciſis integerrimis.* Lovage with double winged Leaves, whoſe Lobes run together, and have entire Segments. *Liguſticum cicutæ folio glabrum. Tourn. Inſt. R. H.* 323. Lovage with a ſmooth Hemlock Leaf.

4. LIGUSTICUM *foliis pinnatifidis, foliolis linearibus planis.* Lovage with Wing-pointed Leaves, whoſe Lobes are very narrow and plain. *Liguſticum Pyrenaicum, fœniculi folio lucidum. Tourn. Inſt.* 324. Lovage of the *Pyrenees* with a ſhining Fennel Leaf.

5. LIGUSTICUM *foliis multiplicato-pinnatis, foliolis pinnatim inciſis.* Lovage with Leaves many Times winged, and Lobes cut like Wings. *Cicutaria latifolia fœtida. C. B. P.* 161. Broad leaved ſtinking Baſtard Hemlock.

The 1ſt Sort is the common Lovage of the Shops; this was formerly cultivated in the Kitchen Gardens as an eſculent Herb, but has been long diſuſed as ſuch in *England*. It grows naturally on the *Apennines*, and alſo near the River *Liguria*, not far from *Genoa*; this hath a ſtrong fleſhy perennial Root, which ſtrikes deep into the Ground, and is compoſed of many ſtrong fleſhy Fibres covered with a brown Skin, and has a ſtrong hot aromatick Smell and Taſte. The Leaves are large, winged, and compoſed of many large Lobes ſhaped like thoſe of Smallage, but larger and of a deeper green. The Lobes toward the Top are cut into acute Segments. The Stalks riſe to the Height of 6 or 7 Feet; they are large and channelled, dividing into ſeveral Branches, each being terminated by a large Umbel of yellow Flowers, which are ſucceeded by oblong ſtriated Seeds. It flowers in *June* and *July*, and the Seeds ripen in Autumn.

This is eaſily propagated by Seeds, which ſhould be ſown in Autumn, ſoon after they are ripe, for when they are kept out of the Ground till Spring, they ſeldom grow the firſt Year; when the Plants come up, they may be tranſplanted into a moiſt rich Border, at about 3 Feet Diſtance from each other, and after they have taken new Root, they will require no other Care but to keep them clean from Weeds. The Roots will abide many Years, and where the Seeds are permitted to ſcatter, the Plants will come up without Care.

The Roots, Leaves, and Seeds of Lovage, are heating and drying, they warm and comfort the Stomach, expel Wind, and provoke Urine.

The 2d Sort grows naturally near the Sea in many Parts of *Scotland*; this hath a perennial Root, but of much leſs ſize than the former, the Leaves are compoſed of broader and ſhorter Lobes, each Leaf having 2 or 3 trifoliate Leaves, whoſe Lobes are indented on their Edges. The Stalk riſes about a Foot high, ſuſtaining a ſmall Umbel of yellow Flowers on the Top, ſhaped like thoſe of the former; theſe appear in *June*, and are ſucceeded by oblong channelled Seeds, which ripen in Autumn. This Plant may be cultivated as the former.

The 3d Sort grows naturally on the *Alps*; this is a perennial Plant. The Stalks riſe about 2 Feet high, and at every Joint are bent alternately, firſt to one Side, then to the oppoſite; at each Joint they are garniſhed with doubly winged Leaves, compoſed of ſmall Lobes which run into each other, and juſt above each Leaf comes out a Side Branch; theſe, as alſo the principal Stalks are terminated by Umbels of white Flowers, which appear in *June*, and are ſucceeded by oblong channelled Seeds, which ripen in Autumn.

The 4th Sort grows naturally on the *Pyrenean* Mountains; this hath a perennial Root. The Leaves are doubly winged. The Lobes are very narrow, and finely divided. The Stalks are ſtrong, and riſe a Foot and a Half high, garniſhed with ſhining winged Leaves, and terminated by pretty large Umbels of yellowiſh Flowers, which appear in *June*, and the Seeds ripen in *September*.

The 5th Sort grows naturally on the *Peloponeſian* Mountains; this hath a very thick fleſhy Root, like that of Parſnep, which ſtrikes deep in the Ground. The Leaves are very large, being compoſed of many winged Leaves, whoſe Lobes are cut into acute Points; theſe are of a deep green, and, when bruiſed, emit a fœtid Odour. The Stalks riſe 4 or 5 Feet high; they are very large and hollow, like thoſe of Hemlock, and ſuſtain at their Top, large Umbels of yellowiſh Flowers, in Shape of a Corymbus; theſe appear in *June*, and are ſucceeded by oblong channelled Seeds, which ripen in Autumn.

This has by ſome Perſons been thought to be the Hemlock of the Ancients, their Conjectures being founded upon the Plant, anſwering in many Particulars the Deſcription of that Plant, and alſo from the poiſonous Quality of this, together with its fœtid Scent; and as this grows naturally in many Parts of *Aſia*, they have been induced to believe it might be the ſame.

All theſe Plants are preſerved in Botanick Gardens for Variety, but are ſeldom cultivated any where elſe; they riſe eaſily from Seeds, which ſhould be ſown in Autumn, and the Plants afterward treated as the firſt, they love a moiſt Soil, and a ſhady Situation.

LIGUSTRUM. *Tourn. Inſt. R. H.* 596. *Tab.* 367. *Lin. Gen. Pl.* 18. Privet; in *French*, *Troëne*.

The *Characters* are,

The Flower has a ſmall tubular Empalement, cut at the Top into 4 obtuſe Segments. It hath 1 Funnel-ſhaped Petal, with a cylindrical Tube cut into 4 oval Segments at the Top, which ſpread open. It hath 2 Stamina which ſtand oppoſite, terminated by erect Summits which are the Length of the Petal, and 1 roundiſh Germen ſupporting a ſhort Style, crowned by an obtuſe bifid Stigma. The Germen turns to a ſmooth round Berry with 1 Cell, incloſing 2 oblong Seeds, flat on one Side but convex on the other.

The *Species* are,

1. Ligustrum *foliis lanceolato-ovatis obtuſis*. Privet with Spear ſhaped, oval, obtuſe Leaves. *Liguſtrum Germanicum. C. B. P.* 475. The common Privet.

2. Ligustrum *foliis lanceolatis acutis*. Privet with Spear-ſhaped Leaves. *Liguſtrum foliis majoribus & magis acuminatis toto anno folia retinens. Pluk. Alm.* 217. Privet with larger and acute pointed Leaves, which continue all the Year, commonly called the *Italian* ever-green Privet.

The 1ſt Sort grows common in the Hedges in moſt Parts of *England*, where it riſes 15 or 16 Feet high, with a woody Stem covered with a ſmooth gray Bark, ſending out many lateral Branches garniſhed with Spear-ſhaped, oval, ſmooth Leaves, ending with obtuſe Points; they are placed by Pairs oppoſite, ſitting cloſe to the Branches, and are of a dark green. The Flowers are produced in thick Spikes at the End of the Branches; they are white, with one tubular Petal cut at the Top into 4 Parts, which ſpread open. Theſe come out in *June*, and are ſucceeded by ſmall round black Berries, which ripen in Autumn; each of theſe contain 2 Seeds. The Leaves of this Sort frequently remain green till after *Chriſtmas*, when they alter their Colour and fall off. There are 2 Varieties of this Sort, 1 with white, and the other hath Leaves variegated with yellow; but in order to preſerve theſe Varieties, they ſhould be planted in poor Land, for if they are in a rich Soil, they will grow vigorous and ſoon become plain.

The other Sort grows naturally in *Italy*; this riſes with a ſtronger Stalk than the former, the Branches are leſs pliable and grow more erect; their Bark is of a lighter Colour, the Leaves are much larger, and end in acute Points; they are alſo of a brighter green, and continue upon the Shrubs in Verdure, till they are thruſt off by the young Leaves in the Spring, as the Phillyrea and moſt other Ever-greens do, ſo that it is undoubtedly a diſtinct Sort, though many have ſuppoſed they were the ſame. The Flowers of this are rather larger than thoſe of the common Sort, and are not often ſucceeded by Berries in this Country.

The Leaves and Flowers of the firſt Sort are uſed in Medicine, they are reckoned to be cooling, drying, and reſtringent, good for Ulcers and Inflammations of the Mouth and Throat, bleeding of the Gums, and Relaxation of the Uvula.

This Shrub is frequently cultivated in the Nurſeries near *London*, to furniſh the ſmall Gardens and Balconies in the City, it being one of the few Plants which will thrive in the Smoke of *London*; but although it will ſome Years in the cloſe Part of the Town, yet it ſeldom produces Flowers after the firſt Year, unleſs it is in ſome open Places, where there is a free Air. In the Country, the Leaves of this Plant will continue green great Part of the Winter. It flowers in *June*, and the Berries ripen in Autumn, which generally hang upon the Branches till *Chriſtmas*.

The *Italian* Sort is now generally preferred to the common Sort for planting in Gardens, the Leaves being larger and continuing green all the Year, renders it more valuable; and being ſo hardy as to reſiſt the greateſt Cold in this Country, it may be planted in any Situation where the common Sort will thrive. I have frequently planted it under the dropping of large Trees, where I find it will thrive better than moſt other Shrubs.

Theſe Plants are eaſily propagated by Laying down their tender Shoots in Autumn, which in one Year's Time will be rooted enough to tranſplant; when they may be removed to the Places where they are deſigned to remain, or planted in a Nurſery for two or three Years, where they may be trained for the Purpoſes deſigned.

They are alſo propagated by Suckers, which theſe Plants ſend forth in great Plenty; but theſe are too apt to put out a great Number of Suckers from their Roots, are not eaſily kept within Bounds; nor do the Plants riſe ſo high, as thoſe propagated by Layers, therefore this Method ſhould be preferred.

They may alſo be propagated by Cuttings, which, if planted in Autumn on a ſhady Border and in a loamy Soil, will take Root very freely, and may be afterward treated as the Layers.

But the ſtrongeſt and beſt Plants, are thoſe raiſed from Seeds; indeed, this is a much more tedious Method than the other, ſo is ſeldom practiſed, for the Seeds generally lie a Year in the Ground before they vegetate; therefore, whoever would propagate the Plants in this Method, ſhould gather the Berries and put them in a Pot with Sand between them, and bury the Pots in the Ground, as is practiſed for Holly Berries and Haws, and after they have lain a Year in the Ground, take them up and ſow them on a Border expoſed to the Eaſt, where the Plants will come up the following Spring, and theſe will make great Progreſs after they have gotten ſome Strength, and theſe will grow upright, and not ſend out Suckers like the other.

Formerly theſe Plants were greatly in Uſe for Hedges, but ſince ſo many others of greater Beauty have been introduced, which are much preferable to theſe for ſuch Purpoſes, they have been intirely rejected, the Trouble of keeping them in Order being very great; nor are the Hedges made with them ever ſo thick and handſome, as thoſe made with divers other Plants.

The two variegated Kinds are pretty Varieties among other ſtriped Shrubs. Theſe may be propagated by budding, or inarching them upon the plain Sort, as alſo by laying down their Branches; but as they ſeldom ſhoot ſo faſt, as to produce many Branches proper for Layers, the other Method is chiefly uſed. The Silver ſtriped Sort is ſomewhat tenderer than the plain, but will endure the open Air, if planted in a dry Soil and in a warm Situation.

LILAC. *See* Syringa.

LILIASTRUM. *See* Hemerocallis.

LILIO-ASPHODELUS. *See* Hemerocallis *and* Crinum.

LILIO-FRITILLARIA. *See* Fritillaria.

LILIO-HYACINTHUS. *See* Scilla.

LILIO-NARCISSUS. *See* Amaryllis.

LILIUM. *Tourn. Inſt. R. H.* 369. *Tab.* 191. *Lin. Gen. Pl.* 371. the Lily; in *French*, *Lis*.

The *Characters* are,

The Flower has no Empalement, but hath 6 Petals narrow at their Baſe, but broad, obtuſe, and reflexed at their Points. The Flower is of the open Bell Shape, the Petals are thick, obtuſe, and Keel-ſhaped on their Back, each Petal has a narrow longitudinal Nectarium at their Baſe. It hath 6 Stamina which are erect and ſhorter than the Petals, terminated by oblong proſtrate Summits, with a cylindrical oblong Germen having 6 Furrows, ſupporting a cylindrical Style the Length of the Petals, crowned by a thick triangular Stigma. The Germen becomes an oblong Capſule with 6 rough Furrows hollowed at the Top, having 3 Cells filled with flat half round Seeds lying above each other, in a double Order.

The *Species* are,

1. Lilium *foliis ſparſis, corollis campanulatis erectis, intus glabris.* Lilly with ſparſed Leaves, and a Bell-ſhaped erect Flower which is ſmooth within. *Lilium album, flore erecto & vulgare. C. B. P.* 76. Common white Lily with an erect Flower.

2. Lilium *foliis ſparſis, corollis campanulatis cernuis, petalis baſi anguſtioribus.* Lily with ſparſed Leaves, and a Bell-ſhaped nodding Flower whoſe Petals are narrower at their Baſe. *Lilium album, floribus dependentibus, ſive peregrinum. C. B. P.* 76. White foreign Lily with pendent Flowers.

3. Lilium *foliis ſparſis, corollis campanulatis erectis, intus ſcabris. Hort. Cliff.* 120. Lily with ſparſed Leaves, and an erect Bell-ſhaped Flower rough within. *Lilium purpureo-croceum majus. C. B. P.* 76. Greater Lily with a purple Saffron-coloured Flower, commonly called Orange Lily.

4. Lilium *humile, foliis linearibus ſparſis, corollis campanulatis erectis, caule bulbifero.* Dwarf Lily with narrow ſparſed Leaves, erect Bell-ſhaped Flowers, and a Stalk bearing Bulbs. *Lilium bulbiferum minus. C. B. P.* 77. Smaller Bulb-bearing Lily, by ſome called the fiery Lily.

5. Lilium *foliis ſparſis ſubulatis, floribus reflexis, corollis revolutis. Hort. Cliff.* 120. Lily with Awl-ſhaped ſparſed Leaves and reflexed Flowers, whoſe Petals are turned backward. *Lilium rubrum anguſtifolium. C. B. P.* 78. Narrow leaved red Lily, or Martagon.

6. Lilium *foliis linearibus ſparſis, pedunculis longiſſimis.* Lily with narrow ſparſed Leaves, and very long Foot Stalks to the Flowers. *Lilium brevi & gramineo folio. C. B. P.* 79. Lily with a ſhort Graſs Leaf, commonly called Martagon of *Pompony*.

7. Lilium *foliis ſparſis lanceolatis, floribus reflexis, corollis revolutis. Hort. Cliff.* 120. Lily with ſparſed Spear-ſhaped Leaves, and reflexed Flowers whoſe Petals turn backward. *Lilium Byzantinum miniatum. C. B. P.* 78. Lily of *Byzantium* with a Carmine Flower, commonly called the ſcarlet Martagon.

8. Lilium *foliis ſparſis lanceolatis, floribus pyramidatis reflexis, corollis revolutis.* Lily with ſparſed Spear-ſhaped Leaves, and pyramidal reflexed Flowers, whoſe Petals turn backward. *Martagon multis & magnis floribus luteis alios ſuperans. Swert. Icon. Pl.* 57. The great yellow Martagon.

9. Lilium *foliis verticillatis, floribus reflexis, corollis revolutis. Hort. Cliff.* 120. Lily with Leaves growing in Whorls, and reflexed Flowers whoſe Petals turn backward. *Lilium floribus reflexis montanum. C. B. P.* 77. Mountain Lily with reflexed Flowers, commonly called purple Martagon.

10. Lilium *foliis verticillatis hirſutis, floribus reflexis, corollis revolutis.* Lily with hairy Leaves growing in Whorls, and reflexed Flowers whoſe Petals turn backward. *Lilium floribus reflexis alterum, lanugine hirſutum. C. B. P.* 718. Another Lily with reflexed Flowers which is hairy and downy, commonly called the red Martagon.

11. Lilium *foliis verticillatis, floribus reflexis, corollis campanulatis. Lin. Sp. Pl.* 303. Lily with Leaves growing in Whorls, and reflexed Bell-ſhaped Flowers. *Lilium ſ. martagon Canadenſe maculatum. Mor. Hiſt.* 2. p. 408. Lily or Martagon of *Canada*, with ſpotted Flowers.

12. Lilium *foliis verticillatis, floribus erectis, corollis campanulatis. Amœn, Acad.* 2. p. 348. Lily with Leaves growing in Whorls, and an erect Bell-ſhaped Flower.

13. Lilium *foliis verticillatis brevibus, corollis campanulatis, unguibus petalorum anguſtioribus, floribus erectis. Icon. Tab.* 165. Lily with very ſhort Leaves growing in Whorls, and Bell-ſhaped Flowers whoſe Petals are very narrow at their Baſe.

There is a greater Variety of Martagons than are here mentioned, but as they are ſuppoſed to be only accidental ariſing from Culture, ſo I thought it would be to little Purpoſe to inſert them here, therefore I ſhall only give their common Titles hereafter.

The common white Lily is ſo well known as to need no Deſcription; this grows naturally in *Paleſtine* and *Syria*, but has been long cultivated in all the Gardens of *Europe*. It is ſo hardy that no Froſt ever injures the Roots, and it propagates ſo faſt by Offsets from the Roots, that it is little regarded, though there is great Beauty in the Flowers, and they emit an agreeable Odour. Of this Sort there are the following Varieties.

The white Lily ſtriped with purple.
The white Lily with variegated Leaves.
The white Lily with double Flowers.

Theſe are Varieties which have accidentally riſen from Culture; the Sort with variegated Flowers, has not been in *England* much more than 30 Years, but is now very common in moſt of the Gardens, and is by ſome Perſons eſteemed for the Variety of its purple Stripes; but as the pure white of the Flower is ſtained by the purple, ſo as to appear of a dull Colour, many prefer the common white Lily.

The Sort with variegated Leaves is chiefly valued for its Appearance in Winter and Spring, for as the Leaves come up early in the Autumn which ſpread themſelves flat on the Ground, and being finely edged with broad yellow Stripes, they make a pretty Appearance during the Winter and Spring Months. The Flowers are the ſame as thoſe of the common Sort, but appear earlier in Summer, which may be occaſioned by the Roots being weaker than thoſe of the plain Sort, for all variegated Plants are weaker than thoſe which are plain.

The white Lily with double Flowers, is leſs valuable than either of the other, becauſe their Flowers never open well, unleſs they are covered with Glaſſes to ſhelter them from the Rain and Dew, ſo often rot without expanding. Theſe Flowers have none of the agreeable Odour which the ſingle Sort is valued for, even when they open the faireſt; for as by the Multiplicity of Petals in the Flowers, the Parts of Generation are deſtroyed, there is a Want of the fecundating Powder from whence the Odour is ſent out.

The Roots, Leaves, and Flowers, of the common white Lily, are uſed in Medicine; the Roots are frequently uſed to ſoften, ripen, and digeſt, Tumours and hard Swellings. *Matthiolus* ſays, that the diſtilled Water of the Flowers, is properly and ſucceſsfully given to Women in hard Labour; and the diſtilled Water of the Leaves, is of great Uſe in Diſtempers of the Lungs.

The white Lily with dependent Flowers, was originally brought from *Conſtantinople*. This is by ſome ſuppoſed to be only a Variety of the common Sort, but is undoubtedly a diſtinct Species; the Stalk is much ſlenderer than the common, the Leaves are narrower and fewer in Number; the Flowers are not quite ſo large, and the Petals are more contracted at their Baſe; theſe always hang downward, whereas thoſe of the common Sort grow erect. The Stalks of this Kind ſometimes are very broad and flat, and appear as if two or three were joined together; when this happens, they ſuſtain from 60 to 100 Flowers, and ſometimes more; this has occaſioned many to think it a different Sort, who have mentioned this with broad Stalks and many Flowers as a diſtinct Species, though it is accidental, for the ſame Root ſcarce ever produces the ſame two Years.

Theſe Sorts are eaſily propagated by Offsets, which the Roots ſend out in ſo great Plenty, as to make it neceſſary to take them off every other, or at moſt every third Year, to prevent their weakening the principal Roots. The Time for removing the Roots is the End of *Auguſt*, ſoon after the Stalks decay, for if they are left longer in the Ground, they will ſoon put out new Fibres and Leaves, when it will be improper to remove them, becauſe that will prevent their flowering the following Summer. They will thrive in almoſt any Soil or Situation, and as they grow tall and ſpread, they muſt be allowed Room; therefore in ſmall Gardens they take up too much Space, but in large Borders they are very ornamental.

The common Orange or red Lily is as well known in the *Engliſh* Gardens, as the white Lily, and has been as long cultivated here. This grows naturally in *Auſtria*, and ſome Parts of *Italy*. This Sort multiplies very faſt by Offsets from the Roots, and is now ſo common, as to be almoſt rejected; however, in large Gardens theſe ſhould not be wanting, for they make a good Appearance when in flower, if they are properly diſpoſed. Of this Sort there are the following Varieties:

The Orange Lily with double Flowers.
The Orange Lily with variegated Leaves.
The ſmaller Orange Lily.

Theſe Varieties have been obtained by Culture, and are preſerved in the Gardens of Floriſts. They all flower in *June* and *July*, and their Stalks decay in *September*, when the Roots may be tranſplanted, and their Offsets taken off, which ſhould be done once in 2 or 3 Years, otherwiſe their Bunches will be too large, and the Flower Stalks weak. This doth not put out new Roots till toward Spring, ſo that the Roots may be tranſplanted any Time after the Stalks decay till *Chriſtmas*. It will thrive in any Soil or Situation, but will be ſtrongeſt in a ſoft gentle Loam not too moiſt.

The bulb-bearing fiery Lily, ſeldom riſes much more than Half the Height of the former, the Leaves are narrower, the Flowers are ſmaller and of a brighter Flame Colour; they are fewer in Number, and ſtand more erect. Theſe come out a Month before the common Sort, and the Stalks put out Bulbs at every Joint, which, if taken off, when the Stalks decay, and planted, will produce Plants, ſo that it may be propagated in Plenty. There are ſeveral Varieties of this, which are mentioned as diſtinct Species, but are ſuppoſed to have been produced by Culture. Theſe are,

The greater broad leaved Bulb-bearing Lily.
The many flowered Bulb-bearing Lily.
The ſmall Bulb-bearing Lily.
The hoary Bulb-bearing Lily.

All theſe Sorts of Lilies will thrive under the Shade of Trees, ſo may be introduced in Plantations, and on the Borders of Woods, where they will have a good Effect during the Time they are in flower.

There is a great Variety of the Martagon Lily; theſe differ from the common Lilies, in having their

Petals reflexed backward in Form of a *Turk*'s Turbant, from whence many give them the Title of *Turk*'s Cap In the Gardens of the Floriſts, particularly thoſe in *Holland*, they make a great Variety of theſe Flowers, amounting to the Number of thirty or upward; but in the *Engliſh* Gardens, I have not obſerved more than half that Number, and moſt of theſe are accidental, for thoſe before enumerated are all that I think may be ſuppoſed ſpecifically different. However, for the Sake of ſuch as are curious in collecting theſe Sorts of Flowers, I ſhall here mention all thoſe Varieties which are to be found in the *Engliſh* Gardens.

The common Martagon with double Flowers.
The white Martagon.
The double white Martagon.
The white ſpotted Martagon.
The Imperial Martagon.
The early ſcarlet Martagon.
The *Conſtantinople* Vermilion Martagon.

The common Martagon with red Flowers, which is the 5th Sort before enumerated, has very narrow Leaves, growing without Order. The Stalk riſes near 3 Feet high, ſuſtaining at the Top 8 or 10 bright red Flowers, which ſtand at a Diſtance from each other. Theſe appear in *June*, and the Stalks decay in *Auguſt*, ſoon after which Time the Roots may be tranſplanted.

The 6th Sort is called Martagon of *Pompony*; the Stalks of this riſe higher than thoſe of the former, the Leaves are ſhorter and ſet cloſer upon the Stalks; each of theſe Stalks ſuſtain from 15 to 30 Flowers, of a very bright red approaching to ſcarlet. The Foot Stalks of the Flowers are very long, ſo that the Head of Flowers ſpreads out very wide; theſe hang downward, but their Petals are reflexed quite back. This flowers ſoon after the 5th Sort.

The 7th Sort is commonly known by the Title of ſcarlet Martagon; this riſes with a Stalk from 3 to 4 Feet high, the Leaves are much broader than thoſe of the former Sorts, and appear as if they were edged with white; they are placed very cloſely upon the Stalks, but without any Order. The Flowers are produced at the Top of the Stalk, they are of a bright ſcarlet, and are ſeldom more than 5 or 6 in Number. This flowers late in *July*, and in cool Seaſons will continue in Beauty great Part of *Auguſt*.

The 8th Sort riſes with a ſtrong Stalk from 4 to 5 Feet high, garniſhed with Leaves as broad as thoſe of the laſt mentioned, which ſtand without Order; the Flowers are produced in Form of a Pyramid, on the upper Part of the Stalk. When the Roots of this Kind are ſtrong, they produce 40 or 50 Flowers upon each Stalk; they are large, of a yellow Colour, ſpotted with dark Spots, ſo make a fine Appearance; but the Flowers have ſo diſagreeable a ſtrong Scent, that few Perſons can endure to be near them, which has occaſioned their being thrown out of moſt *Engliſh* Gardens. This flowers the latter End of *June*.

The 9th Sort is frequently called the purple Martagon, though in moſt of the old Gardens it is known ſimply by the Title of *Turk*'s Cap. This riſes with a ſtrong Stalk from 3 to 4 Feet high, garniſhed by pretty broad Leaves, which ſtand in Whorls round the Stalk, at certain Diſtances. The Flowers are of a dark purpliſh Colour, with ſome Spots of black; they are produced in looſe Spikes on the Top of the Stalks. This flowers in *June*, the Flowers of this Sort have a very diſagreeable Odour when near, but it is not ſo offenſive as the former Sort.

The 10th Sort is very like the former, but the Leaves are narrower; the Whorls ſtand farther aſunder, the Leaves and Stalks are ſomewhat hairy, and the Buds of the Flowers are covered with a ſoft Down; the Flowers are of a brighter Colour with few Spots, and come out earlier in the Summer, though the Stalks appear much later above Ground. This flowers early in *June*, and the Stalks decay in *Auguſt*.

The 11th Sort is commonly called the *Canada* Martagon, as it was firſt brought to *Europe* from thence, but it grows naturally in moſt Parts of *North America*. The Roots of this are oblong and large, made up of Scales like the other Sorts; the Stalks riſe from 4 to 5 Feet high, garniſhed with oblong pointed Leaves placed in Whorls round the Stalk. The Flowers are produced toward the Top of the Stalk, they are large, of a yellow Colour, ſpotted with black, which are ſhaped like the Flowers of the Orange Lily; the Petals of them are not turned backward, like thoſe of the other Sorts of Martagon. This flowers the Beginning of *Auguſt*, and when the Roots are large, the Stalks have a good Number of Flowers, ſo make a fine Appearance. There are 2 Varieties of this, one with larger and deeper coloured Flowers than the other, but they are ſuppoſed to have accidentally come from Seeds.

The 12th Sort grows naturally in *North America*, and is alſo mentioned to grow at *Campſchatſki*. This hath erect Flowers ſhaped like thoſe of the *Canada* Martagon, but the Petals of this are oval, not narrowed at their Baſe as are thoſe, and they ſit cloſe to the Foot Stalk; the Flowers are of a deeper Colour, and not ſo much ſpotted as the other Sort. It flowers in *July*, and the Stalks decay in the Autumn.

This Sort is at preſent rare in *England*, being in very few Gardens. It was ſent me a few Years ago from *Maryland*, but after it had flowered the Root periſhed.

The 13th Sort was ſent me from *Penſylvania* by Mr. *John Bartram*, who found it growing naturally in that Country. The Root of this is ſmaller than thoſe of the other Sorts, it is ſcaly and white, in the Spring it ſends out 1 upright Stalk near a Foot and a Half high; the Leaves come out in Whorls round the Stalks, at Diſtances; they are ſhort, pretty broad, and have obtuſe Points. The Stalk is terminated by 2 Flowers which ſtand erect, upon ſhort ſeparate Foot Stalks; they are ſhaped like the Flowers of the Bulb-bearing fiery Lilly, but the Petals are narrower at their Baſe, ſo that there are Spaces between each, but upward they enlarge and join, forming a Sort of open Bell-ſhaped Flower; their Petals are Spear-ſhaped, ſo are contracted at the Top, where they terminate in acute Points. The Flowers are of a bright purple Colour, marked with ſeveral dark purple Spots toward their Baſe. In the Center of the Flower is ſituated a ſix cornered Germen ſupporting a ſtrong Style, crowned by a three cornered Stigma; round this are ſituated ſix Awl-ſhaped Stamina, terminated by oblong proſtrate Summits; theſe are a little ſhorter than the Style. The Germen afterward turns to an oblong Capſule with 3 Angles, blunt at the Top, divided into 3 Cells, filled with flat Seeds lying over each other. It flowers in *July*, and the Seeds ripen the latter End of *September*.

This Sort is at preſent very rare in the *Engliſh* Gardens, but as it has ripened Seeds the laſt Seaſon here, it may in a few Years become very common. As this Sort grows in a ſmall Compaſs, and the Flowers have no ill Scent, it is proper Furniture for the Borders of ſmall Gardens. The Stalks of this decay ſoon after the Seeds are ripe, when it will be a proper Time to remove the Roots, for theſe do not put out new Fibres till after *Chriſtmas*. The Roots of this Kind do not put out many Offsets, ſo that unleſs it is propagated by Seeds, it cannot be increaſed in any Plenty.

All the Sorts of Martagon may be propagated by Offsets from the Roots, as the common Lilly, which ſome of the Sorts produce in as great Plenty, but there are others which ſend out very few Offsets, which occaſions their preſent Scarcity. The Roots of all the Sorts of Martagon may be ſafely taken up when their Stalks decay, and if there is a Neceſſity for keeping the Roots out of the Ground, if they are wrapped in dry Moſs, they will keep perfectly well for two Months, ſo that if the Roots are to be tranſported to a diſtant Place, this Precaution of wrapping them up is neceſſary; but where they are to be planted in the ſame Garden, there will be no Occaſion for this, eſpecially if they are not kept too long out of the Ground; for if the Place is ready to receive the Roots, they ſhould be planted the Beginning of *October*; ſo if the Roots are put in a dry cool Place, they will keep very good without any farther Care; but if the Ground is not ready to receive them till later in the Year, then it will be proper to cover the Roots with dry Sand, or wrap them in Moſs to exclude the Air, which, if they are much expoſed to, will cauſe their Scales to ſhrink, which weakens the Roots, and is ſometimes the Occaſion of their rotting.

Theſe Roots ſhould be planted 5 or 6 Inches deep in the Ground, eſpecially if the Soil is light and dry; but where the Ground is moiſt, it will be proper to raiſe the Borders in which theſe are to be planted, 5 or 6 Inches above the Level of the Surface of the Ground; for if the Water riſes ſo high in Winter as to come near the Roots, it will cauſe them to rot; and where the Soil is naturally ſtiff and ſubject to bind, there ſhould be a good Quantity of Sea Coal Aſhes or rough Sand, well mixed in the Border, to ſeparate the Parts, and prevent the Ground from binding in the Spring, otherwiſe the Roots will not ſend up very ſtrong Stalks, nor will they make ſo good Increaſe.

As the *Canada* Martagon, the Martagon of *Pompony*, and the laſt Sort, are ſomewhat tenderer than the others, if in very ſevere Winters the Surface of the Ground over them is covered with old Tanners Bark or Sea Coal Aſhes, it will be a good Way to ſecure them from being injured by the Froſt; and in the Spring the Covering may be removed, before the Roots ſhoot up their Stalks.

The tall growing Sorts of theſe are only proper for large Gardens, ſo they may be intermixed with the white and Orange Lillies, the tall growing Iriſes, and other Flowers of the ſame Growth, where, if they are not too much crowded, and are properly diſpoſed, they will make a good Appearance; and as they flower one after another, they may be diſpoſed according to their Seaſons of flowering. There are ſome of the common Martagons hardy enough to thrive under the Shade of Trees, ſo they may be diſpoſed in Wilderneſs Quarters, with the common Sort of Lillies, where they will have a good Effect.

The Roots of all theſe Kinds muſt never be tranſplanted after they have made any Shoots, for that will ſo much weaken them (if it does not entirely kill them) as not to be recovered in leſs than 2 or 3 Years, as I have experienced to my Coſt; for being obliged to remove a fine Collection of theſe Roots early in the Spring, I loſt a great Part of them, and the others were long recovering their Strength.

All the Sorts of Lillies and Martagons may be propagated by ſowing their Seeds, by which Method ſome new Varieties may be obtained, provided the Seeds are ſaved from the beſt Sorts, eſpecially the Martagons, which are more inclinable to vary than the other Lillies. The Manner of ſowing them is as follows:

You muſt be provided with ſome ſquare Boxes about ſix Inches deep, which ſhould have Holes bored in their Bottoms to let the Wet paſs off: Theſe Boxes ſhould be filled with freſh light ſandy Earth, and in the Beginning of *October*, ſoon after the Seeds are ripe, you muſt ſow them thereon pretty thick, covering them over with light ſifted Earth about half an Inch; then place the Boxes where they may have the Morning Sun only, obſerving if the Seaſon ſhould prove dry, to refreſh them often with Water, as alſo to pull out all Weeds which may be produced. In this Situation the Boxes ſhould remain until the Beginning of *November*, when you muſt remove them where they may have as much Sun as poſſible, as alſo be ſcreened from the cold North and Eaſt Winds during the Winter Seaſon; but in the Spring of the Year, about the Beginning of *April*, you muſt remove the Boxes into their former Poſition; for now the young Plants will appear above Ground, which are impatient of too much Heat; beſides, the Earth in the Boxes will dry too faſt at this Seaſon, if expoſed to the full Sun at Noon. You muſt alſo obſerve at this Seaſon, to keep them entirely clear from Weeds, as alſo to refreſh them gently with Water, if the Seaſon ſhould prove dry, but this muſt be done ſparingly and with Caution. In this Place you ſhould let the Boxes remain until the Beginning of *Auguſt*, at which Time you ſhould prepare ſome Beds of the above-mentioned freſh light Earth, which muſt be levelled very even; then take the Earth out of the Boxes, together with the ſmall Bulbs, and ſtrew it equally over the Beds, covering it over about half an Inch thick with fine ſifted Earth; and if the Seaſon ſhould prove very hot and dry, you would do well to ſhade the Beds in the Middle of the Day from the great Heat of the Sun, and refreſh them now and then with Water.

You muſt alſo obſerve to keep them entirely clear from Weeds, and if the following Winter ſhould prove very cold, you muſt cover the Beds with Peas Haulm, or ſome other light covering, to keep out the Froſt, which would prejudice the Roots, if ſuffered to enter deep into the Ground (eſpecially while they are ſo young): But you muſt never let the Covering remain on in mild Weather, which would alſo be very injurious to them.

In *February*, when the hard Froſts are over, you ſhould gently clear off the Earth upon the Surface of the Beds (which during the Winter-Seaſon, will often have contracted a Moſſineſs); and ſift a little freſh Earth equally over the Beds, which will greatly encourage the Roots; but in doing this, you muſt be very careful not to ſtir the Ground ſo deep as to injure the Roots; nor ſhould you defer doing it too late, leſt the Shoots ſhould be coming up, which, by this Operation might be broken, and greatly hurt; and as the Seaſon advances, you muſt be careful to clear them from Weeds, and in dry Weather to water them; and in very hot Days, if you ſhade them from the Sun, it will be of great Service to them; but this need not be done till the latter End of *April* or Beginning of *May*, when the Seaſon is ſometimes very hot and dry.

When their Leaves are quite decayed, you ſhould ſtir the Surface of the Beds again (but do not go too deep;) which will prevent the Weeds from growing very faſt, and be of Service to the Roots; and in *September* you muſt ſift ſome more freſh Earth over the Beds about half an Inch thick, and in Winter and Spring you muſt manage them as was directed for the preceding Year.

In *September* following theſe Roots will require to be tranſplanted to a gteater Diſtance, when you muſt prepare ſome Beds of the ſame freſh light Earth, as was before directed, making them level; then take up the Roots and tranſplant them into the Beds, placing them about 8 Inches aſunder, obſerving to put the Roots with their Buds uppermoſt, and about 4 Inches below the Surface.

This Work ſhould be done when the Weather is moiſt, for if the Roots are tranſplanted in a very dry Seaſon, and there doth not happen Rain ſoon after, they will take a Mouldineſs which many Times rots them.

You muſt alſo obſerve, as was before directed, to keep the Beds entirely clear from Weeds; and in Winter, if the Froſt ſhould be very ſevere, you muſt cover them with Peas Haulm, to prevent the Roots from being injured thereby; and in the Spring you ſhould take off the Earth from the Surface of the Beds, as before, laying ſome freſh thereon, and ſo continue the Summer and Winter's Work, as before.

The 2d Year after being planted in theſe Beds, the ſtrongeſt Roots will begin to flower; at which Time, if you obſerve any peculiar Varieties, you ſhould put down a Stick by each of thoſe Roots to mark them; which may be taken up when their Leaves are decayed, and removed into the Borders of the Flower Garden, or tranſplanted into other Beds at a greater Diſtance, to encourage them to flower ſtrong. But you cannot be a Judge which of thoſe will be good by their firſt Flowers, therefore you ſhould never reject any of them until they have flowered two or three Years; for many Times, ſome of theſe Flowers will make but a mean Appearance the firſt Year, and afterwards become fair handſome Flowers, when they have obtained Strength; ſo that you ſhould ſuffer all ſuch, of whoſe Worth you are not aſſured, to remain undiſturbed two or three Years, that you may be aſcertained which of them are worthy preſerving, theſe ſhould be removed into the Flower Garden at a proper Seaſon; but the ordinary ones may be rejected, or planted in ſhady outer Walks, where, though they are mean Flowers, they will appear well enough.

LILIUM CONVALLIUM. *See* Convallaria.

LILIUM PERSICUM. *See* Fritillaria.

LILIUM SUPERBUM. *See* Glorioſa.

LIME TREE. *See* Tilia.

LIMODORUM. *Flor. Virg.* 110. *Lin. Gen. Pl.* 904. *Helleborine. Tourn. Inſt. R. H.* 436. *Tab.* 249. Baſtard Hellebore.

The *Characters* are,

It hath a ſingle naked Flower Stalk, ariſing immediately from the Root. The Flowers have no Empalement, but a Spatha (or Sheath) ſituated below them. The Flower is compoſed of 5 *oval Petals, which are diſſimilar. The Side Petals ſpread open, but the* 2 *upper are connected together; the lower one is Keel-ſhaped, ſo that it has much the Appearance of a Butterfly Flower. Within the Petals is ſituated a concave Nectarium of* 1 *Leaf, as long as the Petals. It has* 2 *Stamina as long as the Petals, terminated by* 2 *oval Summits. It hath a Column-ſhaped Germen, ſituated under the Flower, as long as the Petals, ſupporting a ſlender Style, faſtened to the Stamina, crowned by a Funnel-ſhaped Stigma. The Column-ſhaped Germen turns to a Capſule of the ſame Form, opening with* 3 *Valves, having* 1 *Cell, in which are lodged* 4 *or* 5 *roundiſh Seeds.*

We have but one *Species* of this Genus at preſent in *England*, viz.

1. LIMODORUM *foliis longis anguſtis acuminatis, pedunculis longiſſimis. Limodorum* with long narrow Leaves ending in acute Points, and a very long Foot Stalk to the Flower. *Helleborine Americana; radice tuberoſâ; foliis longis anguſtis, caule nudo, floribus ex rubro pallidè-purpuraſcentibus. Martyn. Cent.* 1. *Pl.* 50. *Icon. Tab.* 165. *American* Baſtard Hellebore with a tuberoſe Root, long narrow Leaves, a naked Stalk, and Flowers of a red and pale purpliſh Colour.

This Plant grows naturally in *Jamaica*, from whence it was ſent me by the late Dr. *Houſtoun*, with the following Title, *Helleborine purpurea, tuberoſâ radice. Plum. Cat.* 9. ſo that it is the ſame Plant with *Plumier*'s. It alſo grows naturally in the *French* Iſlands of *America*. The Roots of this were afterward brought from the *Bahama Iſlands*, where it was found growing naturally, and it was ſince ſent me from *Penſylvania*, by Mr. *John Bartram*, who found it growing naturally in that Country.

The Root of this Plant is ſhaped like that of the Saffron, but the outer Cover is of a darker brown Colour, from this come out 3 or 4 Leaves, according to the Size and Strength of the Root; theſe are 9 or 10 Inches long, and near three Quarters of an Inch broad in the Middle, being contracted toward both Ends, terminating with long acute Points; they have 5 longitudinal Furrows, like the firſt Leaves of young Palms; theſe Leaves come out in the Spring, and frequently decay the following Winter, but when the Plants are kept in a warm Stove; they are ſeldom deſtitute of Leaves. The Flower Stalk ariſes immediately from the Root, on one Side of the Leaves; this is naked, ſmooth, and of a purpliſh Colour toward the Top. It is near a Foot and a Half high, and terminated by a looſe Spike of purpliſh red Flowers, ſtanding

ing on ſhort Foot Stalks; they are compoſed of 5 or 6 Petals, the two upper are connected together, forming a Sort of Helmet, the two Side Petals expand like the Wings of a Butterfly Flower, and the lower form a Sort of Keel. In the Center of the Petals is ſituated a Column-ſhaped Germen, which riſes from the Baſe of the Petals, ſupporting a ſlender Style, to which adhere 2 Stamina, terminated by oval Summits, as the Style is by a Funnel-ſhaped Stigma; after the Flowers are faded, the Germen becomes a three-cornered Column-ſhaped Capſule, with 1 Cell, opening with 3 Valves, containing ſeveral roundiſh Seeds.

This Plant is not conſtant to any particular Seaſon of flowering; for ſometimes it has flowered in *April* and *May*, and in other Years it has not flowered till *September*, or *October*, but the moſt uſual Time of its flowering, is in *June* and *July*, when the Flowers appear early in the Spring; they are ſucceeded by Seed Veſſels, which ſometimes ripen in this Country.

There are ſeveral other Species of this Genus mentioned by Father *Plumier*, but I have only ſeen one more than this here mentioned, which had oval obtuſe Leaves, furrowed in the ſame Manner as the Leaves of this Sort, but were of a thicker Conſiſtence; the Flowers of this I have not yet ſeen. The Root was ſent me from *Maryland*, where it grew naturally in a Thicket.

The Sort here deſcribed is too tender to thrive in the open Air in *England*, and although with Care it may be preſerved in a warm Green-houſe, yet it ſeldom flowers in ſuch a Situation, ſo that to have it in Perfection, it is neceſſary to keep it in the Tan Bed in the Stove in Winter, and if in Summer the Pots are plunged in a Tan Bed under a deep Frame, the Plants will thrive and flower as ſtrong as in their native Soil.

It is propagated by Offſets from the Root, which are ſent out pretty freely when the Plants are in Vigour; theſe ſhould be taken off, and the Roots tranſplanted, when they are the moſt deſtitute of Leaves. The Roots ſhould have a ſoft loamy Soil, and muſt have but little Water, eſpecially in Winter.

LIMODORUM. *See* Orchis.

LIMON. *Tourn. Inſt. R. H.* 621. *Citrus. Lin. Gen.* 807. The Lemon Tree; in *French*, *Limonier*.

The *Characters* are,

The Flower is compoſed of 5 *oblong thick Petals, which are a little concave, ſpreading open; theſe ſit in a ſmall Empalement of* 1 *Leaf, indented in* 5 *Parts at the Top. It hath about* 10 *or* 12 *Stamina, joined in three or four Bodies, and terminated by oblong Summits. It hath an oval Germen, ſupporting a cylindrical Style the Length of the Stamina, crowned by a globular Summit. The Germen becomes an oval Fruit, with a fleſhy Rind, incloſing a thin pulpy Fruit with ſeveral Cells, each having* 2 *hard Seeds.*

The *Species* are,

1. LIMON *foliis ovato-lanceolatis acuminatis, ſubſerratis.* *Limon* Tree with oval Spear-ſhaped acute pointed Leaves, a little ſawed. *Limon vulgaris. Ferr. Heſp.* 193. The common *Limon*.

2. LIMON *foliis ovatis integris, ramis ſubſpinoſis.* *Limon* with oval entire Leaves, and Branches ſomewhat ſpiny. *Limon acris. Ferr. Heſp.* 331. The ſour *Limon*, commonly called Lime.

3. LIMON *foliis ovato-lanceolatis ſubſerratis, fructu conglomerato.* *Limon* with oval Spear-ſhaped Leaves, ſomewhat ſawed, and Fruit growing in Cluſters. *Limon fructu racemoſo. Tourn. Inſt. R. H.* 621. *Limon* with Fruit growing in Bunches.

There are great Varieties of this Fruit, preſerved in ſome of the *Italian* Gardens, and in both the *Indies* there are ſeveral which have not yet been introduced to the *European* Gardens; but theſe, like Apples and Pears, may be multiplied without End from Seeds, therefore I ſhall only mention the moſt remarkable Varieties to be found in the *Engliſh* Gardens at preſent, as it would be to little Purpoſe to enumerate all thoſe which are mentioned in the foreign Catalogues.

The *Limon* Tree with variegated Leaves.
The ſweet *Limon*.
The Pear-ſhaped *Limon*.
The imperial *Limon*.
The *Limon* called *Adam*'s Apple.
The furrowed *Limon*.
The childing *Limon*.
The *Limon* with double Flowers.

The common *Limon* and the ſweet *Limon* are brought to *England* from *Spain* and *Portugal*, in great Plenty, but the Fruit of the latter are not much eſteemed. The Lime is not often brought to *England*, nor is that Fruit much cultivated in *Europe*, but in the *Weſt-Indies* it is prefered to the *Limon*, the Juice being reckoned wholeſomer, and the Acid is more agreeable to the Palate; there are ſeveral Varieties of this Fruit in the *Weſt-Indies*, ſome of which have a ſweet Juice, but thoſe are not greatly eſteemed, and as the Inhabitants of thoſe Iſlands do not propagate theſe Fruits by Grafting or Budding, being contented with ſowing their Seeds, there is no Doubt but a great Variety of them may be found by any Perſon who is curious in diſtinguiſhing them.

As I have never known the common *Limon* ever vary to the Lime, when raiſed from Seeds, nor the Lime vary to the *Limon*. I ſuppoſe they are ſpecifically different, for I have frequently raiſed both from Seeds, and have always found them continue their Difference in Leaf and Branch, for I never waited to ſee their Fruit, as they were only deſigned for Stocks, to bud other Sorts into them.

The Pear-ſhaped *Limon* is a ſmall Fruit, with very little Juice, ſo is not much propagated any where, the Curious who have Room and Convenience for keeping many of theſe Trees, preſerve a Plant or two of this Sort for Variety.

The Fruit of the imperial *Limon* is ſometimes brought to *England* from *Italy*, but I do not remember to have ſeen any of this Sort imported from *Spain* or *Portugal*, ſo that I ſuppoſe they are not much propagated in either of thoſe Countries, for the Inhabitants of both thoſe fine Countries are ſo very incurious, eſpecially in Horticulture, as to truſt almoſt entirely to Nature, that the Products of their Gardens are inferior both in Numbers and Quality to many other Parts of *Europe*, where the Climate is much leſs favourable for theſe Productions. And in the Article we are now upon, there are many ſtrong Inſtances of the Slothfulneſs, or Incurioſity of the *Portugueze* particularly, for they had many of the moſt curious Sorts of Orange, *Limon*, and Citron Trees, brought from the *Indies* to *Portugal* formerly, which ſeemed to thrive almoſt as well there, as in their native Soil, and yet they have not been propagated; there are a few Trees of theſe Sorts ſtill remaining in ſome neglected Gardens near *Liſbon*, almoſt unnoticed by the Inhabitants. As there are alſo ſeveral curious Trees and Plants, which were formerly introduced from both *Indies*, ſome of which thrive and produce Fruit amidſt the wild Buſhes and Weeds, with which thoſe Gardens are ſpread over.

All theſe Sorts are propagated by budding or inarching them either on Stocks of Lemons or Citrons, produced from Seeds, but they will not ſo readily unite on Orange Stocks, for which Reaſon the Citrons are preferable to either Oranges or Lemons for Stocks, as they readily join with either Sort, and being of larger Growth, cauſe the Buds of the other Sorts to ſhoot much ſtronger than if they were on Stocks of their own Kind. The Method of raiſing theſe Stocks, and the Manner of budding them, being already exhibited under the Article *Aurantium*, it would be ſuperfluous to repeat it here.

The Culture of the Lemon being the ſame with that of the Orange Tree, it would be alſo needleſs to repeat it here; therefore I ſhall only obſerve, that the common Lemons are ſomewhat hardier than the Oranges, and will bring their Fruit to Maturity with us better than they will do, and require to have a greater Share of freſh Air in Winter; for which Reaſon they ſhould always be placed nearer to the Doors or Windows of the Green-houſe, and in ſome curious Gardens theſe Trees have been planted againſt Walls, where, by covering them with Glaſſes in Winter, and protecting them from ſevere Froſt, they have produced Plenty of large Fruit; as theſe Trees do generally produce ſtronger Shoots, they require more Water to be given them than the Orange, but as to the tender Sorts, they muſt be treated with a little more Care, otherwiſe their Fruit will fall in Winter, and come to nothing; theſe Things being fully exhibited before, I refer the Reader (as I hinted) to the Article *Aurantium*, where their Culture is fully ſet forth.

LIMONIUM. *Tourn. Inſt. R. H.* 341. *Tab.* 177. *Statice. Lin. Gen. Pl.* 348. Sea Lavender.

The *Characters* are,

The Flowers have an imbricated Perianthium, riſing one above another. The Flower is Funnel-ſhaped, compoſed of 5 Petals, narrow at their Baſe, but broad and ſpreading at the Top. It hath 5 Awl-ſhaped Stamina, ſhorter than the Petals, crowned by proſtrate Summits. It hath a ſmall Germen, ſupporting 5 ſlender Styles, crowned by pointed Stigmas. The Empalement of the Flower afterward becomes a Capſule, ſhut cloſe at the Neck, but expanded above where the Seeds are lodged.

The *Species* are,

1. LIMONIUM *foliis ovato-lanceolatis, caule tereti nudo paniculato.* Sea Lavender with oval Spear-ſhaped Leaves, and a taper paniculated Stalk. *Limonium maritimum majus. C. B. P.* 192. Common great Sea Lavender.

2. LIMONIUM *foliis oblongo ovatis, caule paniculato patulo, ſpicis florum brevioribus.* Sea Lavender with oblong oval Leaves, a ſpreading paniculated Stalk, and ſhorter Spikes to the Flowers. *Limonium maritimum majus alterum ſerotinum Narbonenſe. H. R. Par.* Another large late flowering Sea Lavender of *Narbonne*.

3. LIMONIUM *foliis ovatis obtuſis, petiolis decurrentibus, caule paniculato, ſpicis florum erectioribus.* Sea Lavender with oval obtuſe Leaves, running Foot Stalks, a paniculated Stalk, and more upright Spikes of Flowers. *Limonium maritimum minus, oleæ folio. C. B. P.* 192. Small Sea Lavender with an Olive Leaf.

4. LIMONIUM *foliis lanceolatis, caule humile patulo, ſpicis florum tenuioribus.* Sea Lavender with Spear-ſhaped Leaves, a low ſpreading Stalk, and ſlender Spikes of Flowers. *Limonium Anglicum minus, caulibus ramoſioribus, floribus in ſpicis rariùs ſitis. Raii Hiſt.* 217. Leſſer *Engliſh* Sea Lavender, with more branched Stalks, and Flowers ſeldom growing in a Spike.

5. LIMONIUM *foliis lineari-lanceolatis, caule ramoſo patulo, floribus diſtantibus uno verſu diſpoſitis.* Sea Lavender with narrow Spear-ſhaped Leaves, a branching ſpreading Stalk, and Flowers placed aſunder on one Side the Stalk. *Limonium Orientale, plantaginis folio, floribus umbellatis. T. Cor. Oriental* Sea Lavender with Plantain Leaves, and Flowers growing in an Umbel.

6. LIMONIUM *foliis radicalibus alternatim pinnato-ſinuatis, caulinis ternis triquetris ſubulatis decurrentibus.* Sea Lavender with the lower Leaves alternately ſinuated like Wings, and thoſe upon the Stalks three cornered, Awl-ſhaped, and running along the Foot Stalk. *Limonium peregrinum, foliis aſplenii. C. B. P.* Foreign Sea Lavender with Spleenwort Leaves.

7. LIMONIUM *caule fruticoſo patulo, foliis lineari lanceolatis craſſis, floribus ſolitariis diſtantibus.* Sea Lavender with a ſpreading ſhrubby Stalk, narrow thick Spear-ſhaped Leaves, and Flowers growing ſingly at a Diſtance from each other. *Limonium Siculum lignoſum, gallas ferens, & non ferens. Bocc. Rar.* Woody *Sicilian* Sea Lavender, ſometimes producing Galls, at other Times not.

8. LIMONIUM *foliis inferioribus lanceolatis hirſutis ſerratis, caulinis ternis linearibus acutis decurrentibus.* Sea Lavender with Spear-ſhaped lower Leaves, which are hairy and ſawed, but growing by Threes on the Stalks, narrow, acute-pointed, and running along the Stalk. *Limonium Africanum, caule alato, foliis integris hirſutis, petalo pallidè flavo, calyce amœnè purpureo. Martyn. Cent.* 48. *Tab.* 48. *African* Sea Lavender with a winged Stalk, entire hairy Leaves, pale yellow Petals to the Flower, and a beautiful purple Empalement.

9. LIMONIUM *foliis cuneiformibus, caule erecto paniculato, ramis inferioribus ſterilibus nudis.* Sea Lavender with Wedge-ſhaped Leaves, an upright paniculated Stalk, and the under Branches ſterile and naked. *Limomonium minus, flagellis tortuoſis. Bocc. Muſ.* Small Sea Lavender with twiſted Shoots.

10. LIMONIUM *caule nudo paniculato, foliis ſpathulatis retuſis.* Sea Lavender with a paniculated naked Stalk, and Spathule-ſhaped blunt Leaves. *Limonium maritimum minus, foliolis cordatis. C. B. P.* Small Sea Lavender with little Leaves, Heart-ſhaped.

11. LIMONIUM *caule nudo paniculato, tereti, foliis tuberculatis.* Sea Lavender, with a naked, taper, paniculated Stalk, and Leaves ſet with Tubercles. *Limonium minus annuum, bullatis foliis, vel echioides. Bot. Monſ.* Small annual Sea Lavender with ſtudded Leaves.

12. LIMONIUM *caule erecto fruticoſo, foliis lineari-lanceolatis obtuſis, floribus alternis.* Sea Lavender with an upright

upright ſhrubby Stalk, narrow Spear-ſhaped Leaves, ending in obtuſe Points, and Flowers ranged alternately. *Limonium Ægyptiacum fruticoſum, foliis lanceolatis obtuſis.* Shrubby *Ægyptian* Sea Lavender with blunt Spear-ſhaped Leaves.

The 1ſt Sort grows naturally in the Marſhes, which are flowed by the Sea, in ſeveral Parts of *England.* The Roots of this Plant are thick, of a reddiſh Colour, and an aſtringent Taſte, ſending out many ſtrong Fibres, which ſtrike deep in the Ground, and from the upper Part of the Root come out ſeveral oval Spear-ſhaped Leaves, from 4 to 5 Inches long, and more than 2 broad in the Middle; they are ſmooth, of a pretty thick Conſiſtence, and of a dark green. The Stalk riſes upward of a Foot high, is naked of Leaves, divided into many Branches, which are again divided into ſmaller toward the Top; theſe are terminated by ſlender Spikes, of pale blue Flowers, ranged on one Side the Stalk above each other, coming out of narrow Covers like Sheaths; theſe appear in *July,* and are ſucceeded by oblong Seeds, which are incloſed in the Empalement, ripening in Autumn.

The 2d Sort grows naturally in the South of *France* on the Sea Coaſt. The Leaves of this Sort are of an oblong oval Form; they are 6 Inches long, and 3 broad, ſmooth, entire, and of a deep green. The Stalk riſes 15 or 16 Inches high, dividing into ſeveral ſpreading Branches, which are divided again into ſmaller, and are terminated by ſeveral ſhort Spikes of pale blue Flowers, ranged on one Side the Foot Stalk. This Sort ſeldom flowers till the End of *Auguſt,* ſo never produces any good Seeds in *England.*

The 3d Sort grows naturally in *Narbonne* and *Provence*; this hath ſmall, oval, obtuſe Leaves, about 2 Inches long, and 1 broad, with pretty long Foot Stalks, which are bordered or winged with Part of the Leaves, which runs cloſe to, and partly embraces the upper Part of the Root; theſe are of a lighter green than either of the former. The Stalk riſes a Foot and a Half high, ſending out Branches alternately on each Side; the lower ones being long, the others gradually diminiſhing to the Top, ſo as to form a looſe Kind of Pyramid; theſe all point upward, and toward their Ends ſend out Spikes of pale blue Flowers, which are erect. This Sort flowers late in *Auguſt,* ſo never perfects Seeds in *England.*

The 4th Sort grows naturally in *England.* It was firſt diſcovered on the Sea Banks near *Walton,* in *Eſſex,* afterward near *Maldon,* in the ſame County, and ſince at the Mouth of the River that runs from *Chicheſter,* in *Suſſex.* The Leaves of this Sort are Spear-ſhaped, about 3 Inches long, and 1 broad in the Middle, leſſening gradually to both Ends. The Stalk riſes 4 or 5 Inches high, dividing into many ſpreading Branches, which are very thick ſet with ſhort Spikes of whitiſh blue Flowers. Theſe appear in *Auguſt,* and the Seeds ripen in *October.*

The 5th Sort was diſcovered by Dr. *Tournefort* in the *Levant,* from whence he ſent the Seeds to the Royal Garden at *Paris,* where they grew, and have produced Seeds many Years, which have been communicated to many of the curious Gardens in *Europe.* The Leaves of this Sort are about 4 Inches long, and three Quarters of an Inch broad in the Middle, diminiſhing gradually to both Ends. The Stalks riſe about 5 or 6 Inches high, dividing into ſeveral ſpreading Branches, which are again divided into ſmaller; theſe are terminated by ſhort Spikes of pale blue Flowers, ranged on one Side the Foot Stalk; the whole, when growing, being ſpread wide, has ſomewhat the Appearance of an Umbel of Flowers. This Sort flowers late in *Auguſt,* ſo never ripens Seeds here.

The 6th Sort grows naturally in *Sicily* and *Paleſtine*; this is a biennial Plant. The lower Leaves which ſpread on the Ground, are indented almoſt to the Middle-rib; theſe Indentures are alternate and blunt. The Stalks riſe a Foot and a Half high, dividing upward into ſeveral Branches; theſe are garniſhed at each Joint with 3 narrow Leaves ſiting cloſe to the Stalks, from whoſe Baſe proceeds a leafy Membrane, or Wing, which runs along on both Sides the Stalk; theſe are rough, and a little hairy. The Stalks are terminated by Panicles of Flowers, which ſit upon winged Foot Stalks, each ſuſtaining 3 or 4 Flowers of a light blue Colour, which continue long without fading. This Sort flowers in *July* and *Auguſt,* but unleſs the Summer is very warm and dry, the Seeds do not ripen in *England.*

The 7th Sort grows naturally in *Sicily*; this hath a ſhrubby Stalk, which riſes about 2 Feet high, dividing into ſeveral ligneous Branches, which ſpread out on every Side; the lower Part of theſe are cloſely garniſhed with gray Leaves, like thoſe of the Sea Purſlain, and are of as thick Conſiſtence. The Branches are terminated by Panicles of blue Flowers, which come out ſingly at a Diſtance from each other, having long Tubes, but divide into 5 Segments upward, which ſpread open. This flowers from *June* till Autumn, but never produces Seeds in *England*; there is a Variety of this which bears Galls like thoſe upon the Oak, which grows naturally in *Sicily,* but I do not know if it is a different Species, for thoſe Plants which are in the *Engliſh* Gardens, have no Appearance of any.

The 8th Sort was raiſed in the *Chelſea* Garden, from Seeds, which were brought me from *Africa*; this is a biennial Plant, which dies ſoon after it has produced Flowers and Seeds. The lower Leaves are but few in Number; they are Spear-ſhaped, hairy, and ſlightly ſawed on their Edges, about 2 Inches long, and half an Inch broad. The Stalk riſes about 15 Inches high, which at each Joint is garniſhed with 3 narrow Leaves, ending in acute Points; from the Baſe of theſe Leaves, is continued a leafy Membrane, or Wing, running along the Stalk on each Side; theſe Stalks branch out but little, and are terminated by ſhort Panicles of Flowers, whoſe Foot Stalks are not winged as in the former, each Foot Stalk ſuſtains 2 or 3 Flowers of a bright blue Colour, out of the Middle of which ariſes another ſmall Flower of a pale yellow Colour. This Sort flowered in *July* and *Auguſt,* 1757, but did not ripen Seeds.

The 9th Sort grows naturally in *Sicily,* and was found ſo growing on the Border of the Sea in *Norfolk,* by Mr. *Henry Scott,* a Gardener, now reſiding at *Weybridge,* in *Surry.* The lower Leaves of this Sort are narrow at their Baſe, but enlarge upward where they are broad, and rounded at the Top, in Shape of a Wedge. The Stalks are ſlender and ſtiff, riſing from

7 to 14 Inches high, ſending out many ſlender Side Branches, all thoſe which proceed from the lower Part of the Stalk are barren, having no Flowers, but toward the Top they have ſhort Panicles of whitiſh Flowers, which are ſmall, and ſit 3 or 4 together on 1 Foot Stalk. This Sort flowers in *July* and *Auguſt*.

The 10th Sort grows naturally near the Sea, about *Marſeilles* and *Leghorn*; this hath many thick fleſhy Leaves, which are ſhaped like a Spatula, growing near the Root, and ſpread on the Ground; they are ſmooth, and of a grayiſh Colour. The Stalks are naked, and riſe about 6 Inches high, dividing toward the Top into many ſmaller Branches, terminated by ſhort crooked Panicles of ſmall Flowers, of a pale red Colour. This Sort flowers in *Auguſt*, but never produces Seeds in this Country.

The 11th Sort grows naturally about *Montpelier* and in *Italy*; this is an annual Plant, with long narrow Leaves, ſet with rough Tubercles like the Leaves of Vipers Bugloſs. The Stalks riſe about 8 Inches high, dividing into 2 or 3 ſmall Branches, terminated by reflexed ſhort Spikes of pale blue Flowers; theſe come out late in *Auguſt*, and the Seeds are ſeldom perfected in *England*.

The 12th Sort grows naturally in *Egypt*, from whence the Seeds were ſent to the Royal Garden at *Paris*, Part of which were ſent me by Dr. *Bernard de Juſſieu*, which grew in the *Chelſea* Garden, where there are ſeveral Plants, which have produced Flowers many Years. This riſes with an upright ſhrubby Stalk to the Height of 7 or 8 Feet, divided upward into many Branches, garniſhed with narrow Spear-ſhaped Leaves, placed without Order; they are of a thick Conſiſtence, and of a gray Colour, ſiting cloſe to the Branches. The Flowers are produced at the End of the Branches in looſe Panicles, ſtanding alternate on each Side the Stalk, one above another, with Intervals between them; they have pretty long Tubes, which enlarge upward, where they are cut into 5 obtuſe Segments, which ſpread open; theſe are of a bright Sky blue, but fade to a purple before they fall off. The Flowers begin to appear in *July*, and there is a Succeſſion of them till Winter.

The 1ſt, 2d, 3d, 4th, 5th, and 8th Sorts, are abiding Plants, which will thrive in the open Air in *England*, ſuch of theſe as grow naturally in *England*, may be eaſily procured from the Places where they grow; theſe Plants may be tranſplanted at almoſt any Time of the Year, provided they are carefully taken up, preſerving ſome Earth to their Roots, and in hot Weather to ſhade them till they have taken new Root; after which Time they will require no other Culture, but to keep the Ground clean from Weeds, and in the Spring to ſtir up the Ground between them to looſen it. As theſe Plants do not require much Culture, nor do they take up much Room, a few of each Sort may be allowed to have a Place in Gardens for Variety. Theſe Plants do not propagate very faſt in Gardens, ſo the Roots need not be removed oftener than every third Year, at which Time they may be ſlipped to make an Increaſe of them; the beſt Time for this is in the Autumn, that the Plants may be well rooted before the Spring, otherwiſe they will not flower very ſtrong the following Summer. They ſhould be planted in a loamy Soil, on an Eaſt aſpected Border, where they may enjoy the Morning Sun, but ſcreened from the great Heat in the Middle of the Day; in ſuch a Situation the Roots will continue ſeveral Years, and flower as well as in their native Soil.

Theſe Plants may alſo be propagated by Seeds, ſo that ſuch of them as do not grow naturally in *England*, may be obtained by procuring their Seeds from Abroad. Theſe ſhould be ſown on a Border expoſed to the Morning Sun, and on a ſoft loamy Soil early in the Spring, for the Seeds lie a conſiderable Time in the Ground before the Plants come up; therefore the Ground muſt be kept entirely clean from Weeds, and if the Seaſon ſhould prove very dry, the Border ſhould be watered 2 or 3 Times a Week, otherwiſe the Seeds will lie a whole Year before they vegetate; when the Plants come up, they muſt be kept clean from Weeds, and in very dry Weather watered, and in the Autumn they may be tranſplanted where they are deſigned to remain.

The 6th and 8th Sorts are biennial Plants, which rarely perfect their Seeds in *England*, ſo that unleſs freſh Seeds can be procured from warm Countries, where they ripen well, it will be very difficult to continue the Sorts. If the Seeds of theſe can be obtained Time enough to ſow them in the Autumn, the Plants will come up the following Spring; but when they are ſown in the Spring, they ſeldom grow the ſame Year. Theſe Seeds ſhould be ſown on a Border of loamy Earth, not ſtiff or moiſt, and expoſed to the South; but when the Sun is warm, the Border ſhould be ſhaded with Mats, to prevent the Earth from drying too faſt. When the Plants come up, they muſt be kept clean from Weeds, and if they are too cloſe, ſome of them ſhould be carefully taken out as ſoon as they are fit to remove, and planted in ſmall Pots, placing them in the Shade till they have taken new Root; then they may be placed where they may enjoy the Morning Sun, till Autumn, when they ſhould be put into a hot Bed Frame, where they may be ſcreened from hard Froſt, but enjoy the free Air in mild Weather; and thoſe Plants which are left in the Border where they were ſown, muſt be covered with Mats in hard Froſt; for though they will often live through the Winter in mild Seaſons, yet hard Froſt will always deſtroy them. The following Summer the Plants will flower, and if the Seaſon proves warm and dry, they will ripen Seeds, and the Roots ſoon after decay.

The 7th and 12th Sorts are ſhrubby Plants, which are too tender to live through the Winter in the open Air in *England*, ſo the Plants muſt be removed into Shelter in the Autumn, but they only require Protection from hard Froſt: Theſe Plants may be placed with Myrtles, Oleanders, and other hardy Green-houſe Plants, where they often continue in flower great Part of Winter, and make a pretty Variety. Theſe Sorts are eaſily propagated by Cuttings, which, if planted in *July* on a ſhady Border, and duly watered, will take Root in ſix or ſeven Weeks, when they ſhould be taken up and planted in Pots filled with light loamy Earth, placing them in the Shade till they have taken Root, then they may be expoſed till *October*, at which Time they muſt be removed into Shelter.

The 11th Sort is annual, and rarely ripens Seeds here, ſo theſe muſt be procured from Abroad, and ſowed as the 6th and 8th Sorts.

LINARIA. *Tourn. Inſt. R. H.* 168. *Tab.* 76. *Antirrhinum. Lin. Gen. Pl.* 668. Toad-flax; in *French, Linaire.*

The *Characters* are,

The Flower hath a permanent Empalement of 1 *Leaf, divided into* 5 *Parts almoſt to the Bottom. The Flower hath* 1 *Petal, and is of the ringent (or grinning) Kind, with an oblong ſwelling Tube, having* 2 *Lips above, with the Chaps ſhut. The upper Lip is bifid and reflexed on the Sides, the lower Lip is trifid and obtuſe. It hath an oblong Nectarium, which is Awl-ſhaped and prominent behind, and* 4 *Stamina included in the upper Lip,* 2 *of which are ſhorter than the other, and a roundiſh Germen ſupporting a ſingle Style, crowned by an obtuſe Stigma. The Germen turns to a roundiſh obtuſe Capſule with* 2 *Cells, filled with ſmall Seeds.*

The *Species* are,

1. LINARIA *foliis lanceolato-linearibus confertis, caule erecto, ſpicis terminalibus ſeſſilibus.* Toad-flax with Spear-ſhaped linear Leaves growing in Cluſters, and an upright Stalk terminated by Spikes of Flowers ſiting cloſe to the Stalk. *Linaria vulgaris, lutea, flore majore. C. B. P.* 212. Common yellow Toad-flax with a larger Flower.

2. LINARIA *foliis ternis ovatis.* Toad flax with oval Leaves placed by Threes. *Linaria triphylla minor lutea. C. B. P.* 212. Smaller three leaved yellow Toad-flax.

3. LINARIA *foliis quaternis lanceolatis, caule erecto ramoſo, floribus pedunculatis.* Toad flax with Spear-ſhaped Leaves placed by Fours, an upright branching Stalk, and Flowers upon Foot Stalks. *Linaria latiſſimo folio Luſitanica. H. R. Par.* Broadeſt leaved *Portugal* Toad-flax.

4. LINARIA *foliis ſubquaternis linearibus, caule diffuſo, floribus racemoſis.* Toad-flax with linear Leaves placed by Fours on the lower Part of the Stalk, a diffuſed Stalk and branching Flowers. *Linaria quadrifolia ſupina. C. B. P.* 213. Low four leaved Toad-flax.

5. LINARIA *foliis lanceolato-linearibus ſparſis, caule florifero erecto ſpicato.* Toad-flax with Spear-ſhaped linear Leaves, and the Flower Stalks erect and ſpiked. *Linaria purpurea major odorato. C. P. P.* 213. Greater ſweet ſcented purple Toad-flax.

6. LINARIA *foliis linearibus confertis, caule erecto ramoſo, floribus ſpicatis terminalibus.* Toad-flax with linear Leaves in Cluſters, an erect branching Stalk, and Flowers in Spikes terminating the Stalks. *Linaria cærulea, foliis brevioribus & anguſtioribus. Raii Syn.* 3. 282. Blue Toad-flax with ſhorter and narrower Leaves.

7. LINARIA *foliis inferioribus quinis linearibus.* Toad-flax with linear Leaves, placed by Fives at the lower Part of the Stalks. *Linaria Sicula multicaulis, folio molluginis. Bocc. Rar.* 38. *Sicilian* Toad-flax with many Stalks and a Bedſtraw Leaf.

8. LINARIA *foliis lanceolatis ſparſis, inferioribus oppoſitis, nectariis ſubulatis, floribus ſubſeſſilibus.* Toad-flax with Spear-ſhaped ſparſed Leaves, which on the lower Part of the Stalk are oppoſite, and Awl-ſhaped Nectaria and Flowers ſiting almoſt cloſe. *Linaria Hiſpanica procumbens, foliis uncialibus glaucis, flore flaveſcente pulchrè ſtriato, labiis nigro-purpureis. Act. Phil.* N°. 412. Trailing *Spaniſh* Toad-flax with gray Leaves an Inch long, yellow Flowers beautifully ſtriped, and dark purple Lips.

9. LINARIA *foliis linearibus confertis, caule nitido paniculato, pedunculis ſpicatis nudis.* Toad-flax with linear Leaves in Cluſters, a ſhining paniculated Stalk, and Flowers in Spikes on naked Foot Stalks. *Linaria capillaceo folio, odora. C. B. P.* 213. Sweet Toad-flax with Hair-like Leaves.

10. LINARIA *foliis lanceolatis hirtis alternis, floribus ſpicatis, foliolo calycino ſupremo maximo.* Toad-flax with alternate hairy Spear-ſhaped Leaves, Flowers in Spikes, and the upper Leaf of the Empalement very large. *Linaria latifolia villoſa, laciniis calcynis inæqualibus, flore majore pallido ſtriato rictu aureo. Horteg. Icon.* Broad leaved hairy Toad-flax, whoſe Empalement is unequally cut, and a large pale ſtriped Flower with a golden Snout.

11. LINARIA *foliis caulinis linearibus ſparſis, radicalibus rotundis.* Toad-flax with linear Leaves placed ſparſedly on the Stalks, and the lower Leaves round. *Linaria annua purpureo-violacea, calcaribus longis, foliis imis rotundioribus. Vaill. Bot. Par.* 118. Annual purple Violet Toad-flax, with long Spurs and rounder Leaves at Bottom.

12. LINARIA *foliis lineari-lanceolatis alternis, floribus racemoſis, calycibus corollâ longioribus.* Toad-flax with linear Spear-ſhaped Leaves placed alternate, branching Flowers, and Empalements longer than the Petals. *Linaria annua, anguſtifolia, floſculis albis, longiùs caudatis. Triump.* 87. Narrow leaved annual Toad-flax, with white Flowers having long Tails.

13. LINARIA *foliis lanceolatis alternis, caule ſuffruticoſo.* Toad-flax with Spear-ſhaped alternate Leaves, and an under Shrub Stalk. *Linaria latifolia Dalmatica, magno flore. C. B. P.* 212. Broad leaved Toad-flax of *Dalmatia* with a large Flower.

14. LINARIA *foliis lanceolatis acuminatis, paniculâ virgatâ.* Toad-flax with Spear-ſhaped acute pointed Leaves, and a Rod like Panicle. *Linaria geniſtæ folio glauco, flore luteo. Par. Bat. App.* 9. Toad-flax with a gray Dyer's Weed Leaf and a yellow Flower.

15. LINARIA *foliis ovatis alternis, caule flaccido procumbente.* Toad-flax with oval Leaves placed alternate, and a weak trailing Stalk. *Elatine folio ſubrotundo. C. B. P.* 253. Fluellin with a roundiſh Leaf.

16. LINARIA *foliis haſtatis alternis, caule flaccido procumbente.* Toad-flax with Arrow-pointed Leaves placed alteanate, and a weak trailing Stalk. *Elatine folio acuminato. C. B. P.* 253. Fluellin with an acute-pointed Leaf.

17. LINARIA *foliis cordatis quinquelobatis alternis glabris.* Toad-flax with Heart-ſhaped Leaves having five Lobes, which are alternate and ſmooth. *Linaria hederaceo folio glabro, ſeu Cymbalaria vulgaris. Tourn. Inſt. R. H.* 169. Toad-flax with a ſmooth Ivy Leaf, or common *Cymbalaria.*

There are ſeveral other Species of this Genus which are of leſs Note, ſo are very rarely admitted into Gardens, for which reaſon I have not enumerated them here.

The 1ſt of theſe Plants grows in great Plenty on the Sides of dry Banks in moſt Parts of *England*, and is ſeldom cultivated in Gardens; for it is a very troubleſome Plant to keep within Bounds, the Roots being very apt to ſpread under Ground, and riſe at a great Diſtance from the Mother Plant, whereby it greatly injures whatever Plants ſtand near it. This is one of the Species mentioned in the Catalogue of Simples at the End of the College *Diſpenſatory*, to be uſed in Medicine.

This Sort hath a great Number of ſlender white Roots, which creep far on every Side, from which ariſe ſeveral erect branching Stalks, a Foot and a Half high, garniſhed with narrow gray Leaves in Cluſters, and terminated by Spikes of yellow Flowers, ſiting cloſe to the Stalk. The Flowers are of one Petal, with a long Tube, to which is fixed a Spur or Heel; the fore Part has the Appearance of the Mouth of an Animal, the under Lip is hairy within, the Chaps are of a golden Colour, but the other Parts of the Flower of a pale yellow; theſe are ſucceeded by roundiſh Capſules with 2 Cells, filled with flat black Seeds. It flowers in *July* and *Auguſt*, when it makes a pretty Appearance, ſo that a few Plants might be allowed a Place in Gardens, were it not for their creeping Roots, which ſpread too much, and become troubleſome Weeds.

There is an Ointment made of this Herb and Hog's Lard, which is accounted excellent for the Piles, being mixed with the Yolk of an Egg at the Time of uſing it. The Plant is reckoned to be aperitive and diuretick, opening Obſtructions of the Liver and Spleen, helping the Dropſy and Jaundice.

The 2d Sort grows naturally about *Valencia* and in *Sicily*; this is an annual Plant, which riſes with an upright branching Stalk near a Foot and a Half high, garniſhed with oval ſmooth gray Leaves, placed often by Threes, and ſometimes by Pairs oppoſite at the Joints; the Flowers grow in ſhort Spikes at the Top of the Stalks, they are ſhaped like thoſe of the common Sort, but have not ſo long Tubes; they are yellow, with Saffron-coloured Chaps. This Sort flowers in *July* and *Auguſt*, and the Seeds ripen in Autumn.

There is a Variety of this whoſe Flowers have a purple Standard and Spur, which makes a pretty Appearance in a Garden; but it is generally ſuppoſed to be only an accidental Variety which has ariſen from Seeds of the former, for which Reaſon I have not enumerated it here, though for many Years Culture of both Sorts, I have never yet perceived either of them alter. The Leaves of this are longer than thoſe of the yellow, but in other Reſpects they do not differ.

Theſe two are propagated by Seeds, which ſhould be ſown in the Spring, on the Borders of the Flower Garden where they are deſigned to remain, and when the Plants come up, they ſhould be thinned where they are too cloſe, and kept clean from Weeds, which is all the Culture they require. If ſome of the Seeds are ſown in Autumn on a warm dry Border, the Plants will live thro' the Winter, unleſs the Froſt proves very ſevere, and theſe autumnal Plants will grow larger, flower earlier, and from theſe good Seeds may always be obtained.

The 3d Sort riſes with upright Stalks near 2 Feet high, which are garniſhed with Spear-ſhaped ſmooth Leaves, placed ſometimes by Fours round the Stalk, and at others by Pairs oppoſite; the Stalks are terminated by large purple Flowers with long Spurs, ſtanding on Foot Stalks. This flowers in *July*, but ſeldom ripens Seeds in *England*; it grows naturally in *Portugal* and *Spain*.

This Sort is tenderer than the laſt, ſo ſhould be planted in a dry Soil and a warm Situation, otherwiſe the Plants are often deſtroyed in Winter. This Plant is propagated by Seeds as the former, and alſo by parting the Roots; but it is adviſeable always to keep ſome of theſe Plants in Pots, that they may be removed into Shelter in Winter, otherwiſe in hard Froſts they will be killed.

The 4th Sort grows naturally about *Verona*, from whence I received the Seeds. This is a perennial Plant, from whoſe Roots ariſe ſeveral diffuſed Stalks about 8 Inches long, garniſhed with narrow ſhort gray Leaves, placed by Fours round the Stalks at Bottom, but upward they are oppoſite; the Stalks are terminated by ſhort branching Tufts of pale yellow Flowers with golden Chaps. This Sort flowers in *June*, and ſometimes the Seeds ripen here in the Autumn.

The 5th Sort grows naturally in the South of *France*, and in *Italy*; this hath a perennial Root ſending out many Stalks, thoſe of them which ſupport the Flowers are erect, and near 3 Feet high, but the other Stalks are weaker and hang looſely on every Side the Plants; theſe are garniſhed with long narrow Spear-ſhaped Leaves placed ſparſedly, they are ſmooth, and of a gray Colour. The Stalks are terminated by long looſe Spikes of blue Flowers, which appear in *June*, *July*, and *Auguſt*, and the Seeds ripen in Autumn, which, if permitted to ſcatter, will produce Plenty of young Plants without any further Care.

The 6th Sort grows naturally about *Henley* in *Oxfordſhire*, and alſo in ſome Parts of *Hertfordſhire*. This hath a perennial Root, from which ariſe ſeveral Stalks near 2 Feet high, which branch out on every Side, and are garniſhed with narrow Leaves growing in Cluſters toward the Bottom, but upward they are ſometimes by Pairs, and at others ſingle. The Flowers are produced in looſe Spikes at the End of the Stalks, they are of a pale blue Colour, and appear in *June* and *July*, and the Seeds ripen in Autumn, which, if permitted to ſcatter, will produce Plenty of Plants. When the Seeds happen to fall on old Walls, the Plants will grow there and continue longer than thoſe planted in the Ground.

I received a Specimen of this Sort from Abroad, by the Title of *Linaria arvenſis cærulea. C. B. P.*

The 7th Sort grows naturally in *Sicily*; this is an annual Plant, from whoſe Root ariſe many Stalks which are very ſlender and about a Foot high, which on their lower Part are garniſhed with 5 very narrow Leaves at each Joint, but upward they are ſometimes by Pairs, and others they are ſingle: The Stalks are divided into many ſmall Branches, which are garniſhed with ſmall yellow Flowers, coming out ſingle at Diſtances from each other; theſe are ſhaped like thoſe of the other

Species. The Flowers appear in *July*, and the Seeds ripen in Autumn. There are two Varieties of this, one with a deep yellow, and the other a Sulphur-coloured Flower.

This is propagated by Seeds as the 2d Sort, or if the Seeds are permitted to ſcatter, the Plants will come up without Care, and if they are kept clean from Weeds, will produce their Flowers early in the Summer.

The 8th Sort grows naturally on the Rocks about *Gibraltar*, from whence the late Sir *Charles Wager* brought the Seeds, which were ſown in his curious Garden at *Parſons Green* near *Fulham*, where they ſucceeded, and from thence many curious Gardens were furniſhed with the Plants. This has a perennial Root, from which come out many ſlender ſucculent Stalks about 8 or 9 Inches long, which are weak and hang down on every Side the Root; they are garniſhed with ſhort narrow Spear-ſhaped Leaves of a gray Colour and ſucculent, ſtanding without Order; they are about 1 Inch long, and a fifth Part of an Inch broad. The Flowers are produced at the End of the Stalks in ſmall Bunches, they are yellow, marked with purple Stripes, and the Chaps of the Flower, as alſo the Spur, are of a dark purple Colour; the Flowers ſit cloſe upon the Top of the Stalk. The Flowers appear in *June* and *July*, but do not produce Seeds in *England*.

This Plant is eaſily propagated by parting the Roots, or planting Cuttings in any of the Summer Months, which, if watered and ſhaded, will ſoon take Root, and may afterwards be planted in Pots filled with freſh light undunged Earth, in which they will ſucceed much better than in a richer Soil; for if they are planted in a fine rich Earth, it cauſes them to grow very faſt for a ſhort Time, but they ſeldom fail to rot ſoon after. Theſe muſt be removed into Shelter in Winter, where they muſt have as much free Air as poſſible in mild Weather, and be only protected from ſevere Cold; ſo that if the Pots are placed under a hot Bed Frame, it will be better than to place them in a Green-houſe, where they are apt to draw too much, which will cauſe them to decay.

The 9th Sort grows naturally in *Wales*, particularly near *Penryn*. This hath a perennial Root, from which ariſe many branching Stalks near 2 Feet high, garniſhed with very narrow Leaves growing in Cluſters, which are of a grayiſh Colour. The Flowers are produced in looſe Spikes at the End of the Branches, they are of a pale blue Colour, and ſmell ſweet. Theſe appear in *June*, and there is often a Succeſſion of Flowers on the Plants till Winter. The Seeds ripen in Autumn, which, if permitted to ſcatter, will furniſh a Supply of young Plants without any further Care. If the Seeds of this Sort get on a Wall, the Plants will come up and continue there much longer than when they are planted in the Ground.

The 10th Sort grows naturally in *Spain*; the Seeds of it were ſent me by Dr. *Hortega* from *Madrid*. This is an annual Plant, which riſes with a ſingle Stalk about a Foot and a Half high, garniſhed with hairy Spear-ſhaped Leaves, ſitting cloſe to the Stalk; theſe are placed alternate. The Flowers grow on the Top of the Stalks in looſe Spikes; they are of a pale yellow Colour with a few deep Stripes, and the Chaps are of a Gold Colour; the upper Segment of the Empalement is much larger than the lower. The Flowers of this Sort are as large as thoſe of the common Sort, they appear in *July*, and the Seeds ripen in Autumn.

The Seeds of this Sort ſhould be ſown in the Spring on a Border of light Earth where the Plants are deſigned to remain, and when the Plants come up, they muſt be treated as thoſe of the ſecond Sort.

The 11th Sort grows naturally in *France*; this is an annual Plant with round Leaves at the Root, the Stalks are ſlender, branching, and riſe a Foot high, garniſhed with very narrow Leaves at each Joint. The Flowers are produced in looſe Spikes at the End of the Branches, they are of a bright blue Colour, and appear in *July*; the Seeds ripen in Autumn, at which Time they ſhould be ſown, for thoſe which are ſown in the Spring, frequently lie in the Ground till the Spring following, before the Plants appear. When the Plants come up, they muſt be thinned where they are too cloſe, and kept clean from Weeds, which is all the Culture they require.

The 12th Sort grows naturally in *Sicily*; this is an annual Plant, which riſes with a branching Stalk 2 Feet high, garniſhed with very narrow Spear-ſhaped Leaves placed alternately. The Flowers are produced ſingly all along the Branches the greateſt Part of their Length; they are ſmall, white, and have very long Tails or Spurs. This flowers in *July*, and the Seeds ripen in Autumn. If the Seeds of this Sort are permitted to ſcatter, the Plants will come up without Care, and require no other Culture but to keep them clean from Weeds.

The 13th Sort grows naturally in *Crete*, and alſo in *Dalmatia*. This riſes with a ſtrong ligneous Stalk 3 Feet high, garniſhed with ſmooth Spear-ſhaped Leaves placed alternate, ſitting cloſe to the Stalk. The Flowers are produced at the End of the Branches in ſhort looſe Spikes, they are of a deep yellow Colour, and much larger than thoſe of the common Sort, ſtanding on ſhort Foot Stalks. This Sort flowers in *July*, but the Seeds very rarely ripen in *England*, ſo that the Plants are ſeldom ſeen in many Gardens here. It is propagated by Seeds, which ſhould be ſown early in the Spring, on a Border of light Earth; and when the Plants come up and are fit to remove, ſome of them ſhould be planted in Pots filled with light ſandy Earth, and placed in the Shade till they have taken new Root, then they may be expoſed with other hardy exotick Plants till the End of *October*, when they ſhould be put into a common hot Bed Frame, where they may be protected from hard Froſt; but in mild Weather, they ſhould enjoy the free Air, for theſe Plants only require to be protected from hard Froſt, for in mild Winters they will live abroad without Shelter, if they are on a dry Soil; therefore a Part of the Plants may be planted on a warm Border of poor ſandy Soil, where they will live through our common Winters very well; and thoſe Plants which grow in Rubbiſh and are ſtinted, will endure much more Cold than the others.

The 14th Sort grows naturally in *Siberia*; this is a biennial Plant, which riſes with an upright branching Stalk, from 3 to 4 Feet high, garniſhed with Spear-ſhaped Leaves, ending in acute Points, of a grayiſh Colour; theſe are placed alternate. The Flowers are produced at the End of the Branches, in looſe Panicles;

they are of a bright yellow Colour, and ſhaped like thoſe of the other Sorts. This flowers in *June* and *July*, and the Seeds ripen in Autumn, which, if permitted to ſcatter, the Plants will come up the following Spring, and require no other Care but to thin them where they are too cloſe, and keep them clear from Weeds. The Plants always decay after they have ripened their Seeds, therefore there ſhould be a Supply of young ones annually.

The 15th Sort grows naturally among Wheat and Rye, in ſeveral Parts of *England*. It is an annual Plant with weak trailing Stalks, which ſpread on the Ground, and are a Foot and a Half long; they are hairy, and garniſhed with oval Leaves, placed alternately, from the ſetting on of the Foot Stalks of the Leaves, at each Joint comes out one Flower, ſhaped like thoſe of the other Species. The upper Lip is yellow, and the under is purple; theſe appear in *June* and *July*, and the Seeds ripen in Autumn, which ſhould be then ſown, or permitted to ſcatter, for if it is ſown in the Spring, it ſeldom grows the ſame Year, for it is rarely ſeen among Spring ſown Corn, in thoſe Lands where it commonly grows.

This Plant is uſed in Medicine, and is eſteemed vulnerary, and good for old cancerous Sores and Ulcers; it is accounted good for Hæmorrhages of all Sorts.

The 16th Sort differs from the 15th, in nothing but the Shape of the Leaves, which in this are ſhaped like the Point of an Arrow, and thoſe of the other are oval; this is more commonly found in *England* than the other.

The 17th Sort was brought from *Italy* to *England*, where it now grows in as great Plenty in the Neighbourhood of *London*, as if it was in its native Country, growing from the Joints of Walls, wherever the Seeds happen to ſcatter. It is a perennial Plant, which will thrive in any Soil or Situation, ſo that where it is once eſtabliſhed, it will be difficult to root out, for the Seeds will get into any Joints of Walls, or the decayed Parts of Pales, as alſo in the Hollow of Trees, where they grow and propagate plentifully, for the Stalks put out Roots at their Joints, ſo ſpread themſelves to a great Diſtance. It flowers all the Summer, and the Seeds ripen in Succeſſion. It is never cultivated in Gardens, but is ſuppoſed to be an excellent Wound Herb.

LINGUA CERVINA. Hart's Tongue.

Theſe Plants commonly grow out from the Joints of old Walls and Buildings, where they are moiſt and ſhady, and alſo on ſhady moiſt Banks, but are ſeldom cultivated in Gardens. There is a very great Variety of theſe Plants, both in the *Eaſt* and *Weſt-Indies*, but there are very few Species of them in *Europe*; all the hardy Sorts may be propagated by parting their Roots, and ſhould have a moiſt Soil and ſhady Situation.

LINUM. *Tourn. Inſt. R. H.* 339. *Tab.* 176. *Lin. Gen. Pl.* 349. Flax; in *French*, *Lin.*

The *Characters* are,

The Flower hath a permanent Empalement, compoſed of 5 *ſmall Spear-ſhaped acute Leaves. The Flower is compoſed of* 5 *large oblong Petals, which are narrow at their Baſe, but broader upward, and ſpread open. It hath* 5 *Awl-ſhaped erect Stamina, terminated by Arrow-ſhaped Summits. In the Center is ſituated an oval Germen, ſupporting* 5 *ſlender Styles, crowned by reflexed Stigmas. The Germen turns to a globular Capſule with* 10 *Cells, opening with* 5 *Valves, in each Cell is lodged* 1 *oval, plain, ſmooth Seed, with an acute Point.*

The *Species* are,

1. LINUM *calycibus capſuliſque mucronatis, petalis crenatis, foliis lanceolatis alternis, caule ſubſolitario. Lin. Sp. Pl.* 277, Flax with Empalements, and Capſules ending in acute Points, crenated Petals to the Flower, Spear-ſhaped alternate Leaves, and the Stalks commonly ſingle. *Linum ſativum. C. B. P.* 214. Manured Flax.

2. LINUM *calycibus capſuliſque mucronatis, petalis emarginatis, foliis lanceolatis alternis, caule ramoſo.* Flax with ſharp pointed Empalements and Capſules; the Petals of the Flower indented, Spear-ſhaped alternate Leaves, and a branching Stalk. *Linum ſativum humilius, flore majore. Bobart. Boerh. Ind. alt.* 1. p. 284. Low manured Flax with a larger Flower.

3. LINUM *calycibus acuminatis, foliis lanceolatis ſparſis ſtrictis ſcabris acuminatis, caule tereti baſi ramoſo. Lin. Sp. Pl.* 278. Flax with acute-pointed Empalements, rough Spear-ſhaped Leaves placed without Order, ending in acute Points, and a taper Stalk, branching at the Baſe. *Linum ſylveſtre, cæruleum, folio acuto. C. B. P.* 107. Wild blue Flax with an acute Leaf.

4 LINUM *calycibus acuminatis, foliis ſparſis linearibus ſetaceis retrorſum ſcabris. Lin. Sp. Pl.* 278. Flax with acute-pointed Empalements, and narrow briſtly Leaves placed without Order, which are rough on their Outſide. *Linum ſylveſtre anguſtifolium, floribus dilutè purpuraſcentibus vel carneis. C. B. P.* 214. Narrow leaved wild Flax with a pale purpliſh, or Fleſh-coloured Flower.

5. LINUM *calycibus capſuliſque acuminatis, caule ſubnudo ſcabro, foliis acuminatis.* Flax with acute-pointed Empalements and Capſules, an almoſt naked rough Stalk, and acute pointed Leaves. *Linum perenne, majus, cæruleum, capitulo majore. Mor. Hiſt.* 2. 573. Greater blue perennial Flax with larger Heads.

6. LINUM *calycibus capſuliſque obtuſis, foliis alternis lanceolatis acutis, caulibus ramoſiſſimis. Plat.* 166 Flax with obtuſe Empalements and Capſules, alternate Spear-ſhaped acute Leaves, and very branching Stalks, commonly called *Siberian* perennial Flax.

7. LINUM *calycibus acutis, foliis lineari-lanceolatis ſparſis, caule paniculata.* Flax with acute Empalements, linear Spear-ſhaped Leaves placed without Order, and a paniculated Stalk.

8. LINUM *calycibus patulis acuminatis, foliis linearibus alternis, caule ramoſo.* Flax with ſpreading acute-pointed Empalements, linear alternate Leaves, and a branching Stalk.

9. LINUM *calycibus hirſutis acuminatis ſeſſilibus alternis, caule corymboſo. Lin. Sp. Pl.* 277. Flax with hairy acute-pointed Empalements, placed alternate, and cloſe to the Stalks, which have a Corymbus. *Linum ſylveſtre, latifolium, hirſutum cæruleum. C. B. P.* 339. Broad leaved hairy wild Flax with a blue Flower.

10. LINUM *calycibus foliiſque lanceolatis ſtrictis mucronatis, margine ſcabris. Lin. Sp. Pl.* 279. Flax with Spear-ſhaped Leaves and Empalements, which end in acute Points, and have rough Edges. *Paſſerina Lobelii. J. B.* 3. p. 454.

11. Linum *calycibus acutis, petalis integris, foliis inferioribus linearibus faſciculatis, ſuperioribus alternis, caule ſuffruticoſo.* Flax with acute Empalements, entire Petals to the Flower, linear under Leaves growing in Cluſters, the upper ones alternate, and a ſhrubby Stalk. *Linum ſylveſtre acutis foliis fruticans. Barrel. Icon.* 1008. Wild Flax with a ſhrubby Stalk and acute Leaves.

12. Linum *foliis lanceolatis alternis, floribus alternis ſeſſilibus, caule ſimplici.* Flax with Spear-ſhaped Leaves placed alternate, Flowers growing alternate, and cloſe to the Stalks, which are ſingle. *Linum luteum ad ſingula genicula floridum. C. B. P.* 214. Yellow Flax with ſingle Flowers growing from the Joints.

13. Linum *foliis oppoſitis ovato-lanceolatis, caule dichotomo, corollis acutis. Hort. Cliff.* 372. Flax with oval Spear-ſhaped Leaves placed oppoſite, a Stalk divided by Pairs, and acute Petals to the Flower. *Linum pratenſe, floſculis exiguis. C. B. P.* 214. Meadow Flax with ſmall Flowers, commonly called Mountain Flax.

14. Linum *calycibus ovatis acutis muticis, foliis lanceolatis inferioribus oppoſitis. Lin. Sp. Pl.* 280. Flax with oval, acute, chaffy Empalements, and Spear-ſhaped Leaves, the lower of which grow oppoſite. *Linum maritimum luteum. C. B. P.* 214. Yellow maritime Flax.

The 1ſt Sort is the Flax which is cultivated in moſt Parts of *Europe*, but particularly in the northern Parts; this is an annual Plant, which uſually riſes with a ſlender unbranched Stalk, a Foot and a Half high, garniſhed with narrow Spear-ſhaped Leaves, placed alternate, ending in acute Points, and are of a gray Colour. The Flowers are produced on the Top of the Stalks, each Stalk ſuſtaining 4 or 5 blue Flowers, compoſed of 5 Petals, narrow at their Baſe, but broad at the Top, where they are ſlightly crenated. The Empalement of the Flower is cut into 5 Parts, which end in acute Points. The Flowers appear in *June*, and are ſucceeded by roundiſh Capſules, which have 10 Cells, opening with 5 Valves, which are terminated by acute Points; each Cell contains 1 ſmooth flattiſh Seed, ending in a Point, of a browniſh Colour. The Seeds ripen in *September*, and the Plants ſoon after periſh.

When this Plant is cultivated in the Fields after the uſual Method, it ſeldom riſes higher than is beforementioned, nor do the Stalks branch out, but when they are allowed more Room, they will riſe between 2 and 3 Feet high, and put out 2 or 3 Side Branches toward the Top, eſpecially if the Soil is pretty good where it is ſown.

The 2d Sort differs from the firſt, in having ſtronger and ſhorter Stalks branching out much more. The Leaves are broader, the Flowers are larger; the Petals are indented at their Extremities. The Seed Veſſels are alſo much larger, and the Foot Stalks are longer; theſe Differences are laſting, for I have cultivated this, and the common Flax on the ſame Ground upward of 30 Years, and have never found either of them alter.

The 3d Sort grows naturally in the South of *France*, in *Italy*, and *Spain*; this riſes from a Foot, to 18 Inches high, branching out almoſt to the Bottom, into many long ſlender Branches, garniſhed with narrow Spear-ſhaped acute-pointed Leaves, placed without Order; theſe are rough to the Touch. The Flowers are produced at the End of the Branches, almoſt in Form of an Umbel; they are ſmaller than thoſe of the manured Sort, and are of a paler blue Colour. The Seed Veſſels are much ſmaller, and not ſo round. It flowers and ſeeds about the ſame Time as the former.

The 4th Sort grows naturally about *Vienna* and in *Hungary*; this Sort ſeldom riſes more than a Foot high, with a ſlender Stalk, which divides into 3 or 4 ſlender naked Foot Stalks at the Top, each ſuſtaining 2 or 3 Flowers, of a pale blue Colour. The Stalks are garniſhed with ſhort, narrow, briſtly Leaves, ſtanding erect, rough on their Outſide. This flowers and ſeeds about the ſame Time as the former, and the Plant ſoon after decays.

There are two or three Varieties of this, which differ in the Colour of their Flowers, but in other Reſpects are the ſame.

The 5th Sort grows naturally in ſome Parts of *England*; this hath a perennial Root, from which ariſe 3 or 4 inclining Stalks, which are garniſhed with a few ſhort narrow Leaves toward their Baſe, but upward have ſcarce any. The Flowers are produced at the End of the Stalks, ſitting very cloſe; they are of a blue Colour, and about the Size of thoſe of the manured Kind, and are ſucceeded by pretty large round Seed Veſſels, ending in acute Points. This flowers about the ſame Time as the common Flax, but the Roots will continue 3 or 4 Years.

The 6th Sort grows naturally in *Siberia*; it hath a perennial Root, from which ariſe ſeveral ſtrong Stalks, in Number proportional to the Size of the Root, and in Height according to the Goodneſs of the Soil where it grows, for in rich moiſt Ground, they will riſe near 5 Feet high, but in middling Ground about 3 Feet; theſe divide into ſeveral Branches upward, and are garniſhed with narrow Spear-ſhaped Leaves, placed alternate; they are not much more than an Inch long, and an Eighth of an Inch broad, of a deep green, ending in acute Points. The Flowers are produced at the End of the Branches, forming a Kind of Umbel; the Stalks riſing nearly of the ſame Height. The Flowers are large, and of a fine blue Colour; theſe appear in *June*, and are ſucceeded by obtuſe Seed Veſſels, which ripen in *September*.

The 7th Sort grows naturally in *Spain*, from whence I received the Seeds; this hath a perennial Root, from which come out ſeveral trailing Stalks, cloſely garniſhed with Leaves; theſe never riſe much from the Ground, but between theſe come out upright Stalks, which riſe upward of 2 Feet high, garniſhed with pretty long narrow Spear-ſhaped Leaves placed without Order. The Flowers grow in a Sort of Panicle toward the upper Part of the Branches; they are about the Size of thoſe of the common Sort, and are of the ſame Colour. It flowers and ripens its Seeds about the ſame Time, and the Roots continue ſeveral Years.

The 8th Sort I received from *Iſtria*; this hath a perennial Root, from which ariſe 2 or 3 Stalks, which divide into ſeveral Branches, at about 6 Inches from the Root, theſe divide again into ſmaller toward the Top; they are garniſhed with ſhort, narrow, acutely pointed Leaves, placed alternately. The Flowers come out from the Side of the Branches, ſtanding on long Foot Stalks. The Empalement of the Flower is compoſed of 5 broadiſh Leaves ending in acute Points, which ſpread open; the Flowers are of the ſame Size and Colour as the common Flax, and appear at the ſame Seaſon. The Seeds ripen in Autumn, and the Roots abide ſeveral Years.

The 9th Sort grows naturally in *Hungary* and *Auſtria*; this hath a perennial Root, from which ariſe ſeveral Stalks near 2 Feet high, which are thick, firm, and hairy, dividing at the Top into ſeveral Branches, and garniſhed with broader Leaves than the other Species, which are hairy. The Flowers grow along the Stalks alternately, they are large, and of a deep blue Colour, appearing at the ſame Time with the common Sort, and the Seeds ripen in Autumn.

The 10th Sort grows naturally in *Germany* and the South of *France*, among the Corn. This is an annual Plant, riſing with an upright Stalk near a Foot and a Half high, garniſhed with Spear-ſhaped, acute-pointed Leaves, rough on their Edges; they are about the ſame Length of thoſe of the common Flax, but a little broader, placed alternately. The Stalks divide toward the Top into ſeveral Branches, each ſuſtaining 2 or 3 yellow Flowers, ſitting in Spear-ſhaped, acute-pointed Empalements. Theſe appear in *July*, but unleſs the Autumn proves favourable, the Seeds never ripen in *England*.

The 11th Sort grows naturally in *Spain*, the Seeds of it were ſent me from *Madrid* by Dr. *Hortega*. This hath a ſhrubby Stalk which riſes a Foot high, ſending out ſeveral Branches garniſhed with very narrow Leaves coming out in Cluſters, but the flowering Branches are garniſhed with broader and longer Leaves placed alternately at every Joint. The Flowers are produced at the End of the Branches, ſtanding erect on long ſlender Foot Stalks; they have acute-pointed Empalements. The Petals of the Flower are large, entire, and white, but before the Flowers open, they are of a pale yellow Colour. Theſe Flowers appear in *July*, but unleſs the Autumn proves favourable, the Seeds do not ripen in *England*. The Flower Stalks of this Sort decay in the Autumn, but the lower ſhrubby Stalk continues with the other Branches all the Year.

The 12th Sort grows naturally on the *Alps*; this hath a perennial Root, from which ariſe 2 or 3 ſlender ſtiff Stalks, which divide at the Top into 2 or 3 Parts, and are garniſhed with Spear-ſhaped Leaves placed alternately. The Flowers come out ſingly at the Joints, and ſit cloſe to the Stalks; their Empalements are cut into 5 ſlender Segments, which are longer than the Petals of the Flower. The Flowers are yellow, and appear about the ſame Time with the common Sort, and the Seeds ripen in the Autumn.

The 13th Sort grows common in many Parts of *England*, on dry barren Hills. It is commonly called *Linum catharticum*, purging Flax, and alſo Mountain Flax. This riſes with ſeveral branching ſlender Stalks about 7 or 8 Inches high, garniſhed with ſmall, oval, Spear-ſhaped Leaves placed oppoſite. The Flowers are ſmall and white, ſtanding on pretty long Foot Stalks, which come out from the Side of the Branches, and alſo where they are divided. They appear in *July*, and are ſucceeded by ſmall round Capſules, containing ſmall flat Seeds which ripen in Autumn. This is one of thoſe Plants which refuſes Culture. I have frequently ſown the Seeds both in Autumn and Spring, but could never get up any of the Plants, and others who have made the Trial have found the ſame.

The 14th Sort grows naturally about *Montpelier*, and in ſome Parts of *Italy* near the Sea. This riſes with upright Stalks near 2 Feet high, the lower Parts of which are garniſhed with Spear-ſhaped Leaves placed oppoſite, but on the upper Part they are alternate. The Stalks divide upward into ſeveral Branches, the Tops of which are garniſhed with yellow Flowers about the Size of thoſe of common Flax, which hang downward; theſe are ſucceeded by ſmall oval Capſules, containing ſmaller Seeds than thoſe of the common Flax. The Flowers appear in *July*, and the Seeds ripen in Autumn.

There are ſeveral other Species of Flax which grow wild in the different Parts of *Europe*, but thoſe here enumerated are all I have ſeen growing in *England*.

The 1ſt Sort is that which is cultivated for Uſe in divers Parts of *Europe*, and is reckoned an excellent Commodity; the right tilling and ordering of which, is eſteemed a good Piece of Huſbandry.

This ſhould be cultivated on a rich Soil, that has not been ploughed for ſeveral Years, upon which Flax always makes the beſt Improvement; but as it draws greatly from the Soil, it ſhould not be ſown 2 Years together on the ſame Ground.

This Ground ſhould be as clean from Weeds as poſſible; in order to have it ſo, it ſhould be fallowed two Winters and one Summer, obſerving to harrow the Ground well between each ploughing, particularly in Summer, to deſtroy the young Weeds ſoon after they appear, that the ſmalleſt of them may not ſtand to ripen their Seed; this will alſo break the Clods, and ſeparate their Parts ſo, that they will fall to Pieces on being ſtirred. If the Land ſhould require Dung, that ſhould not be laid on it till the laſt ploughing, when it muſt be buried in the Ground; but this Dung ſhould be ſuch as is clear from the Seeds of Weeds, which it always will be where there is Care taken to keep the Dunghills clean from Weeds, and the Places near it; for ſuppoſing there ſhould be any Seeds at firſt among the Dung, yet when it is laid in a Heap and well fermented, that will deſtroy the Seeds; but there are few Perſons who are careful to keep their Dunghills, and the Places near them, clean from Weeds; and the Seeds of theſe falling on the Dung, are carried upon the Land, from whence ſprung that vulgar Error, that Dung produces Weeds, which it never can do, if there is not the Seeds mixed with it. Juſt before the Seaſon for ſowing the Flax Seed, the Land muſt be well ploughed, laid flat and even, upon which the Seeds ſhould be ſown about the latter End of *March*, when the Weather is mild and warm.

The common Way is to ſow the Seed in Broad-caſt, and to allow from 2 to 3 Buſhels of Seeds to one Acre of Land; but from many repeated Trials, I have found it is a much better Method to ſow the Seeds in Drills, at about 10 Inches Diſtance from each other, by which half the Quantity of Seed which is uſually ſown, will produce a greater Crop; and when the Flax is thus ſown, the Ground may be eaſily hoed to deſtroy the Weeds, which, if twice repeated in dry Weather, will keep the Ground clean till the Flax is ripe: This may be performed at half the Expence which the Hand weeding will coſt, and will not tread down the Plants, nor harden the Ground, which by the other Method is always done; and it is abſolutely neceſſary to keep the Flax clean from Weeds, otherwiſe they will overbear and ſpoil the Crop.

There are ſome People who recommend the feeding of Sheep with Flax, when it is a good Height; and ſay, they will eat away the Weeds and Graſs, and do the Flax good; and if they ſhould lie in it, and beat it down or flatten it, it will riſe again the next Rain: But this is a very wrong Practice, for if the Sheep gnaw or eat the Flax, the Plants will ſhoot up very weak, and never come to half the Size they would have done, if not cropped; and as to the Sheep deſtroying the Weeds, they never are ſo nice Diſtinguiſhers, for if they like the Crop better than the Weeds, they will devour that and leave the Weeds untouched.

Toward the latter End of *Auguſt* the Flax will begin to ripen, when you muſt be careful that it grow not over ripe; therefore you muſt pull it up as ſoon as the Heads begin to change brown and hang downwards, otherwiſe the Seeds will ſoon ſcatter and be loſt, ſo that the Pluckers muſt be nimble, and tie it up in Handfuls, ſetting them upright till they be perfectly dry, and then houſe them. If the Flax be pulled when it firſt begins to flower, it will be whiter than if it ſtand till the Seed is ripe, but then the Seed will be loſt; but the Thread will be ſtronger when the Flax is left till the Seed is ripe, provided it does not ſtand too long, but the Colour of it will not be ſo good.

The *Siberian* perennial Flax has been made Trial of, and anſwers very well for making common ſtrong Linnen, but the Thread ſpun from this is not ſo fine or white as that which is produced from the common Sort; but as the Roots of this Sort will continue many Years, there will be a great Saving in the Culture, as it will require no other Care but to keep it conſtantly clean from Weeds; which cannot be well done, unleſs the Seeds are ſown in Rows, that the Ground may be conſtantly kept hoed to deſtroy the Weeds when young, for if they are ſuffered to grow large, it will be difficult to get the Ground clean, and they will weaken the Roots. This Sort muſt have the Stalks cut off cloſe to the Ground when ripe, and tied up in ſmall Bundles, managing them afterward as the common Sort.

The 8th Sort which I received from *Iſtria*, produced the fineſt Thread, and this grows taller than the common Flax, and having a perennial Root, it may be worthy of Trial to ſee how it will thrive in the open Fields, for in Gardens it lives through the Winter without receiving the leaſt Injury from the Froſt, ſeveral of the Roots having ſurvived 7 or 8 Winters in the *Chelſea* Garden; and in order to make Trial of its Goodneſs, I gave a Parcel of the Stalks of this, as alſo of the *Spaniſh* and *Siberian* perennial Sorts, to a Perſon who is well ſkilled in watering, breaking, and dreſſing Flax, who prepared them, and aſſured me, that the *Iſtrian* Flax was by much the fineſt of the three, and equal in Goodneſs to any he had ſeen.

There is annually great Quantities of the Seed of Flax imported into *Scotland* and *Ireland*, from the *Eaſt Country*, particularly from *Riga*, to the Amount of many thouſand Pounds Sterling, *per Ann.* which might be ſaved to the Publick, by encouraging the Growth of Flax in the northern Colonies of *America*, where the Summers are warmer than in *England*, ſo that the Seeds would ripen perfectly there, and the Change of Seeds from thence would be greater than that from *Riga*, but it ſhould be confined to the moſt northern Parts of *America*, for ſuch Seeds as are ſaved in the warmer Parts, will not ſucceed well here, as I have experienced in many other Kinds of Plants, whoſe Seeds I have ſent to *Carolina*, where they have grown two or three Years, after which ſome of the Seeds have been ſent me back, which I have always found to be much longer in growing to Perfection, than before.

The other Sorts which are here mentioned, are preſerved in Gardens for the Sake of Variety, but none of them are uſed, except the Mountain Flax, which is eſteemed a good Purger in dropſical Diſorders, and has of late Years been often preſcribed.

They are all of them propagated by Seeds, which may be ſown in the Spring, in the Places where they are to remain, and will require no other Culture, but to keep the Plants clean from Weeds. The annual Sorts will flower and perfect their Seeds the ſame Year, but the Roots of the perennial Sorts will continue ſeveral Years, putting out freſh Stalks every Spring. The ſhrubby Sorts will live through the Winter in the open Air, provided it is in a dry Soil, and a warm Situation, but theſe rarely produce Seeds in *England*.

The Method of Watering, Piling, Breaking, &c. being a particular Buſineſs, and foreign to my Deſign, I ſhall not pretend to give any Directions about it in this Place.

This is a Plant of the greateſt Uſe, in ſeveral of the moſt eſſential Parts of Life; from the Seeds an expreſſed Oil is drawn, which is of great Uſe in Medicine, Painting, &c. from the Bark of the Stalks is made Linnen, and from the Rags of Linnen is made Paper; ſo that this Plant may be eſteemed as one of the moſt valuable and neceſſary in many of the principal Conveniencies of Life.

LINUM UMBILICATUM. *See* Cynogloſſum.

LIPPIA. *Houſt. Gen. Nov. Lin. Gen. Pl.* 699.

This Plant was ſo named by the late Dr. *William Houſtoun*, who diſcovered it at *La Vera Cruz*, in Honour of Dr. *Auguſtus Lippi*, who travelled to *Egypt*, and diſcovered many new Plants.

The *Characters* are,

The Empalement of the Flower is permanent, roundiſh, and compreſſed. The Flower hath 1 *Petal, of the ringent Kind; the upper Lip is divided into* 2 *Parts, which are reflexed; the under Lip is ſmaller, and cut into* 2 *roundiſh Segments. It hath* 4 *ſhort Stamina,* 2 *of which are a little longer than the other, terminated by ſingle Summits, and an oval Germen ſupporting a ſlender Style the Length of the Stamina, crowned by an indented Stigma. The Germen afterward turns to a compreſſed Capſule with* 1 *Cell, opening with* 2 *Valves, which appear like the Scales of the Empalement, incloſing* 2 *Seeds which are joined.*

We know but one *Species* of this Plant at preſent, *viz.*

LIPPIA *arboreſcens, foliis conjugatis oblongis, capitulis ſquamoſis & rotundis. Houſt.* Tree *Lippia*, with oblong Leaves growing by Pairs, and having round ſcaly Heads.

This Plant, in the Country of its native Growth, commonly riſes to 16 or 18 Feet high, with a rough Bark ; the Branches come out by Pairs oppoſite, as do alſo the Leaves, which are oblong, pointed, and a little ſawed on their Edges. From the Wings of the Leaves come out the Foot Stalks, which ſuſtain many round ſcaly Heads, about the Size of a large gray Pea, in which are many ſmall yellow Flowers appearing between the Scales, which are ſucceeded by the Seed Veſſels.

The Seeds of this Plant were ſent to ſeveral curious Gardens in *Europe*, where ſome of the Plants have been raiſed ; but as the Country from whence it came is very warm, the Plants will not thrive in this Climate, unleſs they are preſerved in a warm Stove. Theſe may be treated as other ſhrubby Plants, from warm Countries ; which is, to keep them always in the Stove, plunged in the Bark Bed, obſerving to give them a large Share of Air in warm Weather, and frequently refreſh them with Water ; but in Winter they muſt be watered more ſparingly, and be kept in a moderate Degree of Warmth, otherwiſe they will not live through the Winter, eſpecially while young ; but when they have acquired Strength, they may be preſerved with a leſs Share of Warmth.

As the Plants advance in their Growth, they ſhould be ſhifted into larger Pots, but this ſhould not be too often repeated ; for if they are removed into new Pots every Spring, it will be as often as they require ; ſo that when theſe, and many other exotick Plants, are too often removed, they do not thrive ſo well as when they are permitted to fill the Pots with their Roots. The beſt Time to ſhift theſe Plants is in *April*, at which Time the Tan of the hot Bed ſhould be ſtirred, and freſh Tan mixed with it, to increaſe the Heat. The Earth in which theſe Plants are placed, ſhould be freſh and light, but not too rich.

LIQUIDAMBER. *Mitch. Gen.* 12. *Lin. Gen. Pl.* 955. Liquidamber, ſweet Gum, or Storax Tree.

The *Characters* are,

It hath male and female Flowers on the ſame Tree ; the male Flowers are numerous, diſpoſed in long looſe conical Katkins ; theſe have four-leaved Empalements, but no Petals. They have a great Number of ſhort Stamina joined in one Body, which are convex on one Side but plain on the other, terminated by erect Twin Summits with 4 *Furrows. The female Flowers are ſituated at the Baſe of the male Spike, collected in a Globe ; theſe have a double Empalement like that of the male, and each of them has a Bell-ſhaped angular diſtinct Empalement with many Protuberances. They have no Petals, but an oblong Germen faſtened to the Empalement, ſupporting* 2 *Awl-ſhaped Styles, to which is alſo fixed the recurved Stigmas which are hairy, and as long as the Styles. The Empalement afterward turns to a roundiſh Capſule of* 1 *Cell, with* 2 *Valves at the Top, which are acute and collected in a ligneous Globe, containing many oblong acute-pointed Seeds.*

The *Species* are,

1. LIQUIDAMBER *foliis quinquelobatis ſerratis.* Liquidamber with ſawed Leaves having 5 Lobes. *Styrax aceris folio. Raii. Hiſt.* 1681. Maple-leaved Storax Tree.

2. LIQUIDAMBER *foliis quinquelobatis, ſinuatis obtuſis.* Liquidamber with Leaves having 5 Lobes, which are ſinuated and obtuſe.

The 1ſt Sort has by ſome Writers been ranged with the Maple, but on no other Account, except from the Similitude of the Leaves ; for in Flower and Fruit it is very different from the Maple, and moſt other Genera : Nor has it any Affinity to the Storax Tree, but the Gum which iſſues from this Tree being tranſparent, and having a great Fragrancy, has by ſome ignorant Perſons been taken for that.

It grows plentifully in *Virginia*, and ſeveral other Parts of *North America*, where it riſes with a ſtrait naked Stem 15 or 16 Feet high, and afterward branches out regularly to the Height of 40 Feet or upward, forming a pyramidal Head. The Leaves are angular, and ſhaped ſomewhat like thoſe of the leſſer Maple, having 5 Lobes, but are of a dark green Colour, and their upper Surfaces ſhining, a ſtrong ſweet glutinous Subſtance exudes through the Pores of the Leaves in warm Weather, which renders them clammy to the Touch.

The Flowers are generally produced early in the Spring of the Year, before the Leaves are expanded, which are of a Saffron-Colour, and grow in Spikes from the Extremity of the Branches ; after theſe are paſt, the Fruit ſwells to the Size of a Walnut, being perfectly round, having many Protuberances, each having a ſmall Hole and a ſhort Tail, which extends half an Inch.

The Planks of this Tree being beautifully veined, are often uſed in *America* for wainſcotting Rooms ; but it requires a long Time to ſeaſon the Boards, otherwiſe they are apt to ſhrink.

In *Europe* this Tree is cultivated in the Gardens of the Curious, for Variety ; it is hardy enough to endure the ſevereſt Cold of this Country in the open Air, and there are ſome of them upward of 20 Feet high, though I have not heard of any of them which has produced Fruit.

This is commonly propagated by Layers in *England*, but thoſe Plants which are raiſed from Seeds, grow to be much fairer Trees.

The Seeds of this Tree commonly remain in the Ground a whole Year before the Plants come up, ſo that the ſureſt Way to raiſe them is, to ſow the Seeds in Boxes or Pots of light Earth ; which may be placed in a ſhady Situation during the firſt Summer, and in Autumn they may be removed where they may have more Sun ; but if the Winter ſhould prove ſevere, it will be proper to cover them with Peas Haulm, or other light Covering, which ſhould be taken off conſtantly in mild Weather. In the following Spring, if theſe Boxes or Pots be placed on a moderate hot Bed, it will cauſe the Seeds to come up early, ſo that the Plants will have Time to get Strength before Winter ; but during the firſt and ſecond Winters, it will be proper to ſcreen the

Plants from ſevere Froſt, but afterward they will bear the Cold very well.

The Seeds of the ſecond Sort were ſent by Mr. *Peyſſonel* from the *Levant*, to the *French* King's Garden at *Marli*, a few of which were ſent me by Mr. *Richard*, the King's Gardener, which ſucceeded in the *Chelſea* Garden. The Leaves of this Sort differ from thoſe of the firſt, in having their Lobes ſhorter and ſinuated on their Borders; they end in blunt Points, and are not ſerrated; but as I have not ſeen the Fruit of this, I do not know how it differs from the other.

LIRIODENDRUM. *See* Tulipifera.

LITHOSPERMUM. *Tourn. Inſt. R. H.* 137. *Tab.* 55. *Lin. Gen. Pl.* 166. Gromwell, Gromill, or Graymill; in *French*, *Gremil.*

The *Characters* are,

The Flower hath an oblong, erect, acute-pointed, permanent Empalement, cut into 5 *Parts. It hath* 1 *Petal with a cylindrical Tube the Length of the Empalement, divided into* 5 *obtuſe Points at the Brim, which are erect, the Chaps are perforated. It hath* 5 *ſhort Stamina terminated by oblong Summits, which are ſhut up in the Chaps of the Petal. It hath* 4 *Germina with a ſlender Style the Length of the Tube, crowned by a bifid obtuſe Stigma. The Germina turns to ſo many oval, hard, ſmooth, acute-pointed Seeds, ſitting in the ſpreading Empalement.*

The *Species* are,

1. Lithospermum *ſeminibus lævibus, corollis calycem vix ſuperantibus. foliis lanceolatis. Hort. Cliff.* 46. Gromwell with ſmooth Seeds, the Petal of the Flower ſcarce longer than the Empalement, and Spear-ſhaped Leaves. *Lithoſpermum majus erectum. C. B. P.* 258. Greater upright Gromwell.

2. Lithospermum *ſeminibus rugoſis, corollis vix calycem ſuperantibus. Hort. Cliff.* 46. Gromwell with rough Seeds, whoſe Petals are ſcarce longer than the Empalement. *Lithoſpermum arvenſe, radioe rubrâ. C. B. P.* 258. Field Gromwell with a red Root.

3. Lithospermum *ſeminibus lævibus, corollis calycem multoties ſuperantibus. Hort. Cliff.* 46. Gromwell with ſmooth Seeds, and the Petal many Times longer than the Empalement. *Lithoſpermum minus repens latifolium. C. B. P.* 258. Smaller creeping broad leaved Gromwell.

4. Lithospermum *foliis ſubovalibus nervoſis, corollis acuminatis. Lin. Sp. Pl.* 132. Gromwell with veined Leaves almoſt oval, and acute-pointed Petals. *Lithoſpermum latifolium Virginianum, flore albido longiore. Mor. Hiſt.* 3. p. 447. Broad leaved Gromwell of *Virginia*, with a longer whitiſh Flower.

5. Lithospermum *villoſum, caulibus procumbentibus ſimpliciſſimis. Mat. Med. Lin.* 58. Hairy Gromwell with ſingle trailing Stalks. *Anchuſa puniceis floribus. C. B. P.* 255. *Alkanet* with ſcarlet Flowers.

The 1ſt Sort grows naturally on Banks, and in dry Fields in many Parts of *England*, ſo is ſeldom admitted into Gardens. This hath a perennial Root, from which ariſe upright Stalks 2 Feet high, which branch out upward, and are garniſhed with Spear-ſhaped, rough, hairy Leaves, placed alternate, ſitting cloſe to the Stalks. The Flowers come out ſingly at every Joint of the ſmall Branches, they are white, of one Petal, cut into 4 Parts at the Top, and ſtand within the Empalement; theſe are each ſucceeded by 4 hard white ſhining Seeds, which ripen in the Empalement. It flowers in *May*, and the Seeds ripen in *Auguſt.*

The Seeds of this Plant are accounted a powerful Diuretick, and a Clenſer of the Reins and Ureters, being boiled in Wine or Water, and are of great Service againſt Gravel or Stoppage of Urine.

The 2d Sort is an annual Plant, which grows among Winter Corn in many Parts of *England*. This riſes with a ſlender branching Stalk a Foot and a half high, garniſhed with narrow Spear-ſhaped rough Leaves placed alternately. The Flowers are produced ſingly on the upper Parts of the Stalks, they are ſmall and white; theſe are ſucceeded by 4 rough Seeds, which ripen in the Empalement. It flowers in *June*, and the Seeds ripen in *Auguſt*, ſoon after which the Plants decay.

The 3d Sort grows naturally in Woods in many Parts of *England*; this has a perennial Root from which come out 2 or 3 trailing Stalks ſcarce a Foot long, garniſhed with long, narrow, Spear-ſhaped Leaves, placed alternately; theſe are ſmoother than thoſe of the other Sorts. The Flowers are produced at the End of the Stalks from among the Leaves, they are white, and the Petals are much longer than the Empalements. Theſe appear the latter End of *May*, and each is ſucceeded by 4 ſmooth Seeds, which ripen in the Empalement.

The 4th Sort grows naturally in *North America*; this hath a perennial Root, from which ariſe ſeveral very hairy Stalks, about a Foot and a Half high, garniſhed with rough, hairy, veined Leaves, almoſt oval, ſitting cloſe to the Stalks alternately. The Flowers grow in ſhort reflexed Spikes at the End of the Branches; theſe are white, their Petals being longer than the Empalement, ending in acute Points. It flowers in *June*, and the Seeds ripen in Autumn.

The 5th Sort grows naturally in the South of *France*, and alſo in the *Levant*. This hath a perennial red Root, which runs deep in the Ground, from which comes out in the Spring a ſingle trailing Stalk a Foot long, pretty cloſely ſet with Hairs, and garniſhed with rough prickly Leaves placed alternately. The Flowers are produced in ſhort reflexed Spikes at the End of the Stalk, ſtanding in hairy Empalements; theſe are of a reddiſh purple Colour inclining to ſcarlet, but as they decay change to a deep purple; they are tubulous, but cut at the Top into 4 or 5 Segments, the upper 2 are reflexed. It flowers in *June*, and the Seeds ripen in *Auguſt* and *September*.

This Sort ſtands in the Liſt of medicinal Plants, but at preſent is rarely uſed: The Bark of the Root gives a fine purple Tincture, for which it is ſometimes uſed, but the Colour is not permanent.

Theſe may be cultivated by ſowing their Seeds ſoon after they are ripe, in a Bed of freſh Earth, allowing them at leaſt a Foot Diſtance from each other, obſerving to keep them clear from Weeds, and they will thrive in almoſt any Soil or Situation.

LOAM is a common ſuperficial Earth, that is a Mixture of Sand and Clay, commonly of a yellowiſh Colour, though there is ſome Loam that is blackiſh. Some call Loam the moſt common ſuperficial Earth met with in *England*, without any Regard to the Proportion it bears to Sand or Clay; but moſt generally the Appellation of Loam is applied to a ſoft fat Earth, partaking of Clay, but eaſy to work.

It is found by Experience, that Plants of all Sorts will grow in it; and where-ever it is found, it appears to be a more beneficial Soil to Plants than any other. A Clay uſed in Grafting is alſo called Loam.

LOBELIA. *Plum. Nov. Gen.* 21. *Tab.* 31. *Lin. Gen. Pl.* 897.

The *Characters* are,

The Empalement of the Flower is ſmall, of 1 *Leaf, indented in* 5 *Parts, and grows about the Germen. The Flower has but* 1 *Petal, which is tubulous, and a little ringent, cut into* 5 *Parts at the Brim;* 2 *of the upper Segments are ſmaller than the other, are more reflexed and deeper cut, theſe conſtitute the upper Lip; the* 3 *lower ſpread open, and are larger. It hath* 5 *Awl-ſhaped Stamina the Length of the Tube, terminated by oblong cylindrical Summits, divided at their Baſe in* 5 *Parts. It has a pointed Germen under the Petal, ſupporting a cylindrical Style, crowned by an obtuſe prickly Stigma. The Germen becomes an oval fleſhy Berry with* 2 *Cells, each containing a ſingle Seed.*

We have but one *Species* of this Genus, *viz.*

Lobelia *fruteſcens, foliis ovali-oblongis integerrimis. Flor. Zeyl.* 313. Shrubby *Lobelia* with oblong oval entire Leaves. *Lobelia fruteſcens portulacæ folio. Plum. Nov. Gen.* 21. Shrubby *Lobelia* with a Purſlain Leaf.

This Plant riſes with a ſucculent Stalk, 5 or 6 Feet high, garniſhed with oval, oblong, ſucculent Leaves, which are placed alternately; theſe ſit cloſe to the Stalk. The Flowers are produced on long Foot Stalks, which come out from the Side of the Stalk, and ſuſtain 2 or 3 white Flowers of 1 Petal, cut into 5 acute Segments at the Brim; theſe are ſucceeded by oval Berries as large as Bullace, containing a Stone with 2 Cells, in each of theſe is lodged a ſingle Seed.

The Seeds of this Plant were ſent to *England* by Mr. *Cateſby*, in the Year 1724, who gathered them in the *Bahama Iſlands*, where the Plants grow in Plenty, near the Shore of the Sea, and ſince that Time the Seeds have been ſent to *England*, by Dr. *William Houſtoun*, who gathered them at *La Vera Cruz*; ſo that I believe the Plant is common in moſt of the warm Parts of *America*.

It is propagated by Seed, which muſt be procured from the Countries of its natural Growth, for the Plants will not produce them in *Europe*; theſe Seeds ſhould be ſown in Pots filled with light ſandy Earth, and then plunged into a hot Bed of Tanners Bark, where the Plants will come up in about a Month or five Weeks, provided the Bed is kept warm, and the Earth often watered. When the Plants are up, they ſhould be kept in a temperate hot Bed, and frequently refreſhed with Water, but it muſt not be given them in large Quantities, for they are very ſucculent, and ſubject to periſh with much Moiſture, eſpecially while they are young. When the Plants are about 2 Inches high, they ſhould be carefully taken out of the Pots in which they were ſown, and each planted in a ſeparate ſmall Pot filled with freſh light ſandy Earth, and then plunged into the hot Bed again, obſerving to ſhade them in the Heat of the Day, until they have taken new Root. In this hot Bed the Plants may remain until the middle, or latter End of *September*, when they muſt be removed into the Stove, and plunged into the Tan Bed, in the warmeſt Part of the Stove, for they are very tender Plants while young, therefore muſt be kept very warm, otherwiſe they will not live through the Winter in this Country. In the Spring following the Plants may be ſhifted into ſomewhat larger Pots, and then plunged into a freſh hot Bed to forward their Growth, for if they are not puſhed on while they are young, they ſeldom grow to any Size, nor will they ever flower, ſo that in order to have them in any Beauty, they muſt be carefully managed. The Leaves of this Plant are very ſubject to contract Filth, by being conſtantly kept in the Stove, therefore they ſhould be waſhed with a Sponge frequently, to keep them clean, otherwiſe they will appear unſightly.

LOBUS ECHINATUS. *See* Guilandina.

LOCULAMENTS are little diſtinct Cells, or Partitions, within the Seed Veſſels of Plants.

LONCHITIS. Rough Spleenwort.

The *Characters* are,

The Leaves are like thoſe of the Fern, but the Pinnulæ are eared at their Baſe; the Fruit alſo is like that of the Fern.

The *Species* are,

1. Lonchitis *aſpera. Ger.* Rough Spleenwort.

2. Lonchitis *aſpera major. Ger. Emac.* Greater rough Spleenwort.

The 1ſt of theſe Plants is very common in ſhady Woods, by the Sides of ſmall Rivulets in divers Parts of *England*; but the ſecond Sort is not quite ſo common, and has been brought into ſeveral curious Botanick Gardens from the Mountains in *Wales*. There are alſo great Variety of theſe Plants in *America*, which at preſent are Strangers in the *European* Gardens; they are ſeldom cultivated but in Botanick Gardens, for Variety, where they muſt have a moiſt Soil, and ſhady Situation.

LONGITUDINAL VESSELS, in Plants, are ſuch as are extended in Length through the woody Parts of Trees and Plants, into which the Air is ſuppoſed to enter, and mix with the Juices of the Plant, and thereby augment its Bulk.

LONICERA. *Lin. Gen. Pl. Chamæceraſus. Tourn. Inſt. R. H.* 609. *Tab.* 379. Upright Honeyſuckle.

The *Characters* are,

The Flower has a ſmall Empalement, cut into 5 *Parts, upon which the Germen ſits. It hath* 1 *Petal, with an oblong Tube, cut into* 5 *Parts at the Brim, and* 5 *Awl-ſhaped Stamina, almoſt the Length of the Petal, terminated by oblong Summits. Under the Petal is ſituated a roundiſh Germen, ſupporting a ſlender Style the Length of the Petal, crowned by an obtuſe Stigma. The Germen afterward turns to* 2 *Berries, which join at their Baſe.*

The *Species* are,

1. Lonicera *pedunculis bifloris, baccis diſtinctis, foliis integerrimis pubeſcentibus. Prod. Leyd.* 238. *Lonicera* with 2 Flowers on each Foot Stalk, diſtinct Berries, and entire woolly Leaves. *Chamæceraſus dumetorum fructu gemino rubro. C. B. P.* 451. Dwarf Cherry with twin red Fruit, commonly called, Fly Honeyſuckle.

2. Lonicera *peunculis bifloris, baccis coadunatis didymis. Lin. Sp. Pl.* 174. *Lonicera* with 2 Flowers on a Foot Stalk, and twin Berries joined together. *Chamæ-*

ceraſus Alpina, fructu gemino rubro duobus punctis notato. C. B. P. 451. Dwarf *Alpine* Cherry with a red twin Fruit, marked with two Points, commonly called, Red-berried upright Honeyſuckle.

3. LONICERA *pedunculis bifloris, baccis coadunatis globoſis, ſtylis indiviſis. Lin. Sp. Pl.* 174. *Lonicera* with 2 Flowers on a Foot Stalk, globular Berries, joined, and undivided Styles. *Chamæceraſus montana, fructu ſingulari-cæruleo. C. B P.* 451. Mountain Dwarf Cherry with a ſingle blue Fruit, commonly called, Single blue-berried upright Honeyſuckle.

4. LONICERA *pedunculis bifloris, baccis diſtinctis, foliis ſerratis. Prod. Leyd.* 238. *Lonicera* with 2 Flowers on a Foot Stalk, diſtinct Berries, and ſawed Leaves. *Chamæceraſus Alpina, fructu nigro gemino. C. B. P.* 451. *Alpine* Dwarf Cherry with a black twin Fruit, called, Black-berried upright Honeyſuckle.

5. LONICERA *pedunculis bifloris, baccis diſtinctis, foliis cordatis obtuſis. Hort. Upſal.* 42. *Lonicera* with 2 Flowers on a Foot Stalk, diſtinct Berries and blunt Heart-ſhaped Leaves. *Chamæceraſus fructu gemino rubro, foliis glabris cordatis. Amm. Ruth.* 184. Dwarf Cherry with a twin red Fruit, and ſmooth Heart-ſhaped Leaves.

6. LONICERA *pedunculis bifloris, baccis diſtinctis, foliis oblongis glabris. Lin. Sp. Pl.* 174. *Lonicera* with 2 Flowers on a Foot Stalk, diſtinct Berries, and oblong ſmooth Leaves. *Xyloſteum Pyrenaicum. Tourn. Inſt.* 609. *Pyrenean* Dwarf Cherry.

7. LONICERA *capitulis lateralibus pedunculatis, foliis petiolatis. Lin. Sp. Pl.* 175. *Lonicera* with lateral Heads growing on Foot Stalks, and Leaves having Foot Stalks. *Symphoricarpos foliis alatis. Dill. Hort. Elth.* 371. commonly called, ſhrubby St. Peterſwort.

The 1ſt Sort has been many Years cultivated in the *Engliſh* Gardens under the Title of Fly Honeyſuckle. It grows naturally on the *Alps*, and in other cold Parts of *Europe*. It riſes with a ſtrong woody Stalk, 6 or 8 Feet high, covered with a whitiſh Bark, dividing into many Branches, garniſhed with oblong oval Leaves, placed oppoſite; they are entire, and covered with ſhort hairy Down. The Flowers come out from the Side of the Branches on each Side, oppoſite, ſtanding on ſlender Foot Stalks, each ſuſtaining 2 white Flowers ſtanding erect; theſe have 1 Petal, cut into 5 Parts, the 3 lower being narrow, and reflexed, the 2 broader ſtand upright; theſe appear in *June*, and are ſucceeded by 2 red clammy Berries, which are joined at their Baſe, and ripen the Beginning of *September*.

The 2d Sort grows naturally on the *Alps*; this has been long cultivated in the *Engliſh* Gardens, by the Title of Red-berried upright Honeyſuckle; this hath a ſhort thick woody Stem, which divides into many ſtrong woody Branches growing erect; theſe are garniſhed with Spear-ſhaped Leaves, placed oppoſite, ſtanding on Foot Stalks; they are entire, their under Side being of a pale green, but their upper of a dark green. The Flowers ſtand on very long ſlender Foot Stalks, which come out oppoſite on each Side the Branches, at the Baſe of the Leaves; they are red on their Outſide, but pale within, ſhaped like thoſe of the former Sort, but a little larger; theſe appear the latter End of *April*, and are commonly ſucceeded by 2 oval red Berries, joined at their Baſe, which have two Punctures; theſe ripen the Beginning of *Auguſt*. Sometimes there is but 1 Berry ſucceeding each Flower, which is frequently as large as a *Kentiſh* Cherry; this I believe has led ſome to ſuppoſe it was a diſtinct Species, as I thought myſelf, when I ſaw all the Fruit on the Shrub were ſingle, but, the following Years, I found they had twin Fruit like the others.

The 3d Sort grows naturally on the *Apennines*; this is a Shrub of humbler Growth, than either of the former, ſeldom riſing more than 4 or 5 Feet high. The Branches are ſlender, covered with a ſmooth purpliſh Bark. The Joints are diſtant, where the Leaves come out by Pairs, oppoſite, and ſometimes there are two on each Side. The Foot Stalks of the Flowers are very ſhort, each ſuſtaining 2 white Flowers, ſhaped like thoſe of the former Sorts; theſe are ſucceeded by blue Berries, which are ſingle and diſtinct. The Flowers appear in *May*, and the Berries ripen in *Auguſt*.

The 4th Sort grows naturally on the *Alps* and *Helvetian Mountains*; this is a Shrub very like the former, but the Branches are ſlenderer. The Leaves are a little ſawed on their Edges. The Flowers have 2 Berries ſucceeding them, in which conſiſts their Difference. It flowers at the ſame Time with the former.

The 5th Sort grows naturally in *Tartary*, from whence the Seeds were ſent to the Imperial Garden at *Peterſburgh*, where they ſucceeded, and from thence the Seeds were ſent to me; this is a Shrub which grows about the ſame Height with the two former, to which this has a great Reſemblance in its Branches, but the Leaves of this are Heart-ſhaped, and the Berries are red, growing ſometimes ſingle, at others double, and frequently there are 3 joined together, which are about the ſame Size with the former. It flowers in *April*, and the Fruit is ripe in *July*.

The 6th Sort grows naturally on the *Pyrenean Mountains*, and alſo in *Canada*, from whence the Seeds were brought to Duke *D'Ayen*, which were ſown in his curious Garden at St. *Germain*, where they ſucceeded, and his Highneſs was ſo good to furniſh me with a Plant; this ſeldom riſes more than 3 or 4 Feet high, dividing into ſeveral ſpreading irregular Branches, garniſhed with oblong ſmooth Leaves, placed by Pairs, oppoſite. The Flowers come out from the Side of the Branches, on ſlender Foot Stalks, each ſuſtaining 2 white Flowers, which are cut into 5 Segments almoſt to the Bottom; theſe are ſucceeded by Berries as the other Sorts. It flowers in *April*.

The 7th Sort grows naturally in *North America*, but has been many Years propagated in the *Engliſh* Gardens; this hath a ſhrubby Stalk, which riſes about 4 Feet high, ſending out many ſlender plain Branches, garniſhed with oval hairy Leaves, placed by Pairs, oppoſite, having very ſhort Foot Stalks. The Flowers are produced in Whorls round the Stalk; they are of an herbaceous Colour, and appear in *Auguſt*. The Fruit, which is hollow, and ſhaped like a Pottage Pot, ripens in the Winter. Dr. *Dillenius*, in his *Hortus Elthamenſis*, has titled this Plant, *Symphoricarpos foliis alatis*, ſuppoſing the Leaves to be winged, but as the Leaves fall off ſingle, and the Branches remain upon which they were fixed, they cannot be called winged Leaves.

Theſe Shrubs are now propagated in the Nurſery Gardens, near *London*, for Sale, and are commonly intermixed with other flowering Shrubs for Variety, but as there is little Beauty in their Flowers, a few of them only ſhould be admitted, to ſet off thoſe which are preferable; they are all of them very hardy Plants, ſo will thrive in a cold Situation, better than in a warm one; they love a moiſt light Soil, in which they will thrive, and produce a greater Quantity of Fruit than in dry Ground.

They may be propagated either by Seeds, or Cuttings. The Seeds commonly lie in the Ground a Year before they vegetate, but require no particular Culture; if they are ſown in Autumn, many of them will grow the following Spring. The Cuttings ſhould be planted in Autumn in a ſhady Border, where they will put out Roots the following Spring, and in the following Autumn they may be removed into a Nurſery, to grow two Years to get Strength, after which they ſhould be tranſplanted where they are deſigned to remain.

LOPPING. It is very obſervable, that moſt old Trees are hollow within, which does not proceed from the Nature of the Trees, but is the Fault of thoſe who have the Management of them, who ſuffer the Tops to grow large before they lop them, as the Aſh, Elm, Hornbeam, *&c.* and perſuade themſelves, that they may have the more great Wood, but, in the mean Time, do not conſider that the Cutting off great Tops endangers the Life of a Tree, or, at beſt, wounds it ſo, that many Trees yearly decay more in their Bodies, than the yearly Tops come to, and at the ſame Time that they furniſh themſelves with more great Wood, they do it at the Loſs of the Owner. And, indeed, though the Hornbeam and Elm will bear great Tops when the Body is little more than a Shell, yet the Aſh, if it comes to take Wet at the Head, very rarely bears more Top after the Body of the Tree decays; therefore, if once theſe Trees decay much in the Middle, they will be worth little but for the Fire, ſo that if you find a Timber Tree decay, it ſhould be cut down in Time, that the Timber be not loſt.

The Lopping of young Trees, that is, at 10 or 12 Years old at moſt, will preſerve them much longer, and will occaſion the Shoots to grow more into Wood in one Year, than they do in old Tops at two or three. Great Boughs, ill taken off, often ſpoil many a Tree, for which Reaſon they ſhould always be taken off cloſe and ſmooth, and not parallel to the Horizon, and cover the Wound with Loam and Horſe Dung mixed, to prevent the Wet from entering the Body of the Tree.

When Trees are at their full Growth, there are ſeveral Signs of their Decay, as, the withering or dying of many of their Top Branches, or if the Wet enters at any Knot, or they are any-wiſe hollow, or diſcoloured, if they make but poor Shoots, or if the Woodpeckers make any Holes in them.

This Lopping of Trees is only to be underſtood for Pollard Trees, becauſe nothing is more injurious to the Growth of Timber Trees, than that of lopping or cutting off great Branches from them; whoever will be at the Trouble of trying the Experiment on 2 Trees of of equal Age and Size, growing near each other, to lop or cut off the Side Branches from one of them, and ſuffer all the Branches to grow upon the other, will, in a few Years find the latter to exceed the other in Growth every Way, and this will not decay near ſo ſoon.

All Sorts of reſinous Trees, or ſuch as abound with a milky Juice, ſhould be lopped very ſparingly, for they are ſubject to decay when often cut. The beſt Seaſon for lopping theſe Trees, is ſoon after *Bartholomew Tide*, at which Time they ſeldom bleed much, and the Wound is commonly healed over before the cold Weather comes on.

LORANTHUS. *Vaill. Act. R. Sc.* 1702. *Lin. Gen. Pl.* 400. *Lonicera. Plum. Nov. Gen.* 17. *Tab.* 37.

The *Characters* are,

The Empalement of the Flower is entire, concave, and crowns the Germen. The Flower is tubulous, and cut into 5 *narrow Segments, almoſt to the Bottom, which are reflexed. It hath* 4 *Stamina, longer than the Tube of the Flower, terminated by globular Summits. The Germen, which is ſituated below the Empalement, ſupports a ſingle Style, longer than the Stamina, crowned by an oval Stigma. The Germen becomes an oval pulpy Fruit with* 1 *Cell, including ſeveral compreſſed Seeds.*

There is but one *Species* of this Genus at preſent known, *viz.*

Loranthus. *Lin. Sp. Pl.* 331. *Loranthus racemoſus, flore coccineo, baccis nigris. Vaill. Act.* 1722. Branching *Loranthus* with a ſcarlet Flower, and black Berries. *Lonicera flore coccineo, baccis nigris. Plum. Nov. Gen.* 17. *Lonicera* with a ſcarlet Flower, and black Berries.

This Plant was diſcovered by Father *Plumier*, in the *French* Iſlands in *America*, and was afterward found growing naturally at *La Vera Cruz*, by the late Dr. *Houſtoun*, who ſent the Seeds to *England*; this riſes with a ſhrubby weak Stalk, 8 or 10 Feet high, dividing into ſeveral Branches at the Top, garniſhed with oblong entire Leaves, which have the 3 longitudinal Nerves. The Flowers are produced at the End of the Branches in ſmall Cluſters, and are of a ſcarlet Colour; they are cut into 5 narrow Segments, almoſt to the Bottom; theſe are ſucceeded by oval Berries, with a Pulp covering a hard Shell with 1 Cell, incloſing ſeveral compreſſed Seeds.

The Title of *Lonicera* was given by Father *Plumier*, in Honour of *Adam Lonicera*, who publiſhed a Hiſtory of Plants at *Franckfort*, in 1588, but *Vaillant*, altered the Name to *Loranthus*, in the Memoirs of the Academy of Sciences at *Paris*, for 1722, in which Dr. *Linnæus* has followed him.

This Plant is propagated by Seeds, which ſhould be ſown as ſoon as poſſible, when they are ripe, for if they are kept out of the Ground long, they often miſcarry, or if they do grow, it is not till the Year after, ſo that thoſe Seeds which come from *America*, very ſeldom grow the firſt Year, therefore they ſhould be ſown in Pots, and kept in a moderate hot Bed the firſt Summer, and in Autumn removed into the Stove, where if the Pots are plunged in the Tan Bed between the Plants, the Earth will be kept moiſt, and in the Spring they may be taken out, and plunged into a moderate freſh hot Bed, which will bring up the Plants, which muſt be planted in ſeparate ſmall Pots, and kept in the Bark Stove, treating them as other tender Plants from the ſame Country.

LOTUS. *Tourn. Inſt. R. H.* 402. *Lin. Gen. Pl.* 803. Birds-foot Trefoil; in *French*, *Lotier.*

The *Characters* are,

The Empalement of the Flower is of 1 *Leaf, permanent and*

and cut at the Top into 5 Parts. The Flower is of the Butterfly Kind. The Standard is roundiſh, and reflexed backward. The Wings are broad, roundiſh, and ſhorter than the Standard, cloſing together at the Top. The Keel is cloſed on the upper Side, and convex on the under, riſing a little. It hath 10 Stamina, 9 joined and 1 ſeparate, terminated by ſmall Summits, with an oblong taper Germen, ſupporting a ſingle Style, crowned by an inflexed Stigma. The Germen becomes a cloſe cylindrical Pod with 1 Cell, opening with 2 Valves, having many tranſverſe Partitions, in each of theſe is lodged 1 roundiſh Seed.

The *Species* are,

1. LOTUS *capitulis depreſſis, caulibus decumbentibus, leguminibus cylindricis. Lin. Sp. Pl.* 775. Birds-foot Trefoil with depreſſed Heads, trailing Stalks, and cylindrical Pods. *Lotus corniculata glabra, minor. J. B.* 2. 356. Leſſer ſmooth corniculated Birds-foot Trefoil.

2. LOTUS *leguminibus ſubbinatis linearibus ſtrictis erectis, caule erecto, pedunculis alternis. Lin. Sp. Pl.* 774. Birds-foot Trefoil with erect linear ſtrait Pods, growing in Pairs, an erect Stalk, and alternate Foot Stalks. *Lotus pentaphyllos, minor, hirſutus ſiliquâ anguſtiſſimâ. C. B. P.* 332. Smaller five leaved hairy Birds-foot Trefoil, with very narrow Pods.

3. LOTUS *capitulis depreſſis, caulibus decumbentibus, foliis linearibus glabris, leguminibus linearibus.* Birds-foot Trefoil with depreſſed Heads, trailing Stalks, ſmooth linear Leaves, and very narrow Pods. *Lotus pentaphyllos fruteſcens, tenuiſſimis glabris foliis. C. B. P.* 332. Shrubby five leaved Birds-foot Trefoil with very narrow ſmooth Leaves.

4. LOTUS *capitulis ſubgloboſis, caule erecto, leguminibus rectis glabris. Hort. Upſ.* 221. Birds-foot Trefoil with globular Heads, an erect Stalk, and ſtrait ſmooth Pods. *Lotus villoſus, altiſſimus, flore glomerato. Tourn. Inſt. R. H.* 403. Talleſt hairy Birds-foot Trefoil with a glomerated Flower.

5. LOTUS *capitulis dimidiatis, caule fruticoſo. foliis nitidis. Hort. Cliff.* 372. Birds foot Trefoil with Heads divided in the Middle, a ſhrubby Stalk, and ſhining Leaves. *Lotus argentea Cretica. Pluk. Alm.* 226. Silvery Birds-foot Trefoil of *Crete.*

6. LOTUS *capitulis hirſutis, caule recto hirſuto, leguminibus ovatis. Hort. Upſal.* 220. Birds-foot Trefoil with hairy Heads, an erect hairy Stalk, and oval Pods. *Lotus pentaphyllos ſiliquoſus villoſus. C. B. P.* 332. Five leaved, hairy, podded Birds-foot Trefoil.

7. LOTUS *capitulis ſubgloboſis hirſutis, caule erecto ramoſo, hirſuto, foliis tomentoſis.* Birds-foot Trefoil with globular Heads, which are hairy, an upright branching hairy Stalk, and woolly Leaves. *Lotus hæmorrhoidalis humilior & candidior. Tourn. Inſt.* 403. Lower Birds-foot Trefoil, having whiter Leaves.

8. LOTUS *leguminibus ſubquinatis arcuatis compreſſis, caulibus diffuſis. Hort. Cliff.* 372. Birds-foot Trefoil with 5 arched compreſſed Pods, and diffuſed Stalks. *Lotus ſiliquis ornithopodii. C. B. P.* 332. Birds-foot Trefoil, with Pods like Birds-foot.

9. LOTUS *leguminibus ſubbinatis linearibus compreſſis nutantibus. Hort. Cliff.* 372. Birds-foot Trefoil with 2 narrow compreſſed nodding Pods. *Lotus ſiliquis geminis peregrinâ. Boher. Ind.* 2. p. 38. Foreign Birds-foot Trefoil with twin Pods.

10. LOTUS *leguminibus ſolitariis rectis teretibus terminalibus, caule erecto. Sauv. Monſp.* 189. Birds-foot Trefoil with an erect Stalk, terminated by a ſingle taper erect Pod. *Lotus pratenſis ſiliquoſa lutea. C. B. P.* 332. Yellow, Meadow, podded Birds-foot Trefoil.

11. LOTUS *leguminibus ſubſolitariis gibbis incurvis. Hort. Cliff.* 370. Birds-foot Trefoil with ſingle Convex incurved Pods. *Lotus pentaphyllos, ſiliquâ cornutâ C. B. P.* 332. Five leaved Birds-foot Trefoil with horned Pods.

12. LOTUS *leguminibus ſolitariis membranaceo-quadrangulatis, bracteis lanceolatis. H. W.* 143. *Flor. Suec.* 610. Birds-foot Trefoil with ſingle Pods which are made quadrangular by a Membrane, and Spear-ſhaped Bracteæ. *Lotus maritima lutea ſiliquoſa, folio pingui glabro. Bot. Monſp.* Podded, yellow, maritime Birds-foot Trefoil with a ſmooth Leaf.

13. LOTUS *leguminibus conjugatis membranaceo-quadrangulis, bracteis oblongo-ovatis. Lin. Sp. Pl.* 774. Birds-foot Trefoil with conjugated Pods, which are made quadrangular by a Membrane, and oblong oval Bracteæ. *Lotus lutea, ſiliquâ anguloſâ. Boerh. Ind. Alt.* 2. p. 37. Yellow Birds-foot Trefoil with angular Pods.

14. *Lotus leguminibus ſolitariis membranaceo quadrangulatis, bracteis ovatis. Hort. Upſ.* 220. Birds-foot Trefoil with ſingle Pods which are quadrangular, with a Membrane and oval Bracteæ. *Lotus ruber ſiliquâ anguloſâ. C. B. P.* 332. Red Birds-foot Trefoil with angular Pods, commonly called Winged Pea.

15. LOTUS *capitulis dimidiatis, caule diffuſo ramoſiſſimo, foliis tomentoſis. Prod. Leyd.* 387. Birds-foot Trefoil with Heads divided into 2 equal Parts, a very branching diffuſed Stalk and woolly Leaves. *Lotus ſiliquoſa maritima lutea, Cytiſi facie. Barrell. Icon.* 1031. Podded, yellow, maritime Birds-foot Trefoil with the Appearance of *Cytiſus.*

16. LOTUS *leguminibus ſubternatis, caule herbaceo erecto, foliis linearibus. Hort. Cliff.* 372. Birds-foot Trefoil with 3 Pods, an erect herbaceous Stalk and narrow Leaves. *Lotus anguſtifolia, flore luteo purpuraſcente. Inſulæ, St. Jacobi. Hort. Amſt.* 2. p. 165. Narrow leaved Birds.foot Trefoil of *St. James*'s Iſland, with a yellow purpliſh Flower.

17. LOTUS *capitulis aphyllis, foliis ſeſſilibus quinatis. Lin. Sp. Plant.* 776. Birds-foot Trefoil with naked Heads, and Leaves placed by Fives ſetting cloſe to the Branches. *Dorycnium Monſpelienſium. Lob. Icon.* 51. *Dorycnium* of *Montpelier.*

The 1ſt, 2d, and 3d Sorts grow naturally in many Parts of *England*, ſo are rarely admitted into Gardens. When theſe grow in moiſt Land and a ſhady Situation, they ſend out Stalks near 2 Feet long, but upon dry chalky and gravelly Ground, their Stalks are not more than 3 or 4 Inches long, and lie flat on the Ground. I have always obſerved in thoſe Paſtures where theſe Plants have grown, that the Cattle of all Sorts have avoided eating them, but the Graſs all round them has been eaten very bare. I have cut the Plants when young, and given it to various Kinds of Animals, but could never get them to eat it; and yet the Seeds of theſe have been gathered and ſold by ſome Quacks in Huſbandry, under the Title of Lady's Finger Graſs, to be ſown as an Improvement to Land for Paſture.

The Roots of theſe are perennial, ſo are difficult to get out when they have had long Poſſeſſion of the Land, and they produce great Quantities of Seeds, which is caſt about by the Elaſticity of the Pods when ripe, to a conſiderable Diſtance; they flower in *June*, and the Seeds ripen in *September*.

The 4th Sort grows naturally in the South of *France*, in *Italy* and *Sicily*, this has by ſome been ſuppoſed the *Cytiſus* of *Virgil*, but without Foundation, for it does not anſwer the Deſcription given of that Plant. This hath a ſtrong perennial Root, from which ariſe many upright ſtrong Stalks from 3 to 4 Feet high, covered wſth a purpliſh Bark, and toward the Top, ſend out a few Side Branches; theſe are garniſhed at every Joint by a trifoliate Leaf whoſe Lobes are Wedge-ſhaped; at the Baſe of the Foot Stalk are placed 2 Heart-ſhaped Lobes ſitting cloſe to the Branch; the Leaves are hairy on their under Side; the Flowers are produced at the End of the Branches almoſt in globular Heads, ſitting cloſe to the Foot Stalk: Theſe are of a pale Fleſh Colour and appear in *June*, and are ſucceeded by ſmooth ſtrait Pods almoſt an Inch long, which change to a brown Colour when ripe, and contain ſeveral roundiſh Seeds which ripen in *September*. It is rarely cultivated but in Botanick Gardens for Variety, but if any Perſon has an Inclination to cultivate this Plant for feeding Cattle, it may be done in the ſame Way as the *Lucern*, for which there is full Directions in the Article *Medicago*. It riſes eaſily from Seeds, is very hardy, and will thrive on any light dry poor Ground. Cows and Horſes will eat this Plant when green, but I have not tried if they will feed on it when made into Hay.

The 5th Sort grows naturally in *Syria* and *Crete*, this riſes with ſlender Stalks which require Support, from 3 to 4 Feet high, ſending out a few ſide Branches; theſe are garniſhed at each Joint with neat ſhining ſilvery Leaves which are trifoliate, and have 2 Appendages at the Baſe of their Foot Stalks, as the other Sort; they are in Shape like the former, but a little ſmaller, and have an acute ſhort Point at their Top. The Foot Stalks of the Flowers, which are from 2 to 3 Inches long, ariſe from the Side of the Branches, and ſuſtain Heads of yellow Flowers, which part in the Middle, each Head containing 4 or 6 Flowers; theſe appear in *May*, *June*, and *July*, and are ſucceeded by long taper Pods filled with roundiſh Seeds which ripen in the Autumn.

This Sort has a perennial Stalk, but is too tender to live thro' the Winter in the open Air in *England*, ſo is kept in Pots and removed into the Green-houſe in Autumn, and treated like other hardy exotick Plants, which only require Protection from Froſt, ſo want no artificial Heat. It may be propagated by Seeds, which if ſown on a Bed of light Eatth in *April*, the Plants will come up in about a Month after; and in another Month will be fit to remove, when they ſhould be each put into a ſeparate ſmall Pot filled with freſh light Earth, placing them in the Shade till they have taken new Root, then they may be removed to a ſheltered Situation, where they may remain till Autumn.

It may be alſo propagated by Cuttings, which may be planted during any of the Summer Months, on a Bed of light Earth, covering them cloſe with a Bell or Hand Glaſs, and ſcreening them from the Sun, in about 5 or 6 Weeks they will have taken Root, when they muſt be inured to bear the open Air, and ſoon after may be planted in Pots, and treated as the ſeedling Plants.

The 6th Sort grows naturally in the South of *France* and *Italy*, this hath a perennial Stalk, which riſes 3 Feet high; when the Roots are large, they frequently ſend up ſeveral of theſe Stalks, eſpecially if the old ones are cut down; the Stalks are hairy and divide into ſeveral Branches cloſely garniſhed with hoary trifoliate Leaves, having 2 Appendages at the Baſe of the Stalk; the Flowers are collected into Heads ſitting on pretty long Foot Stalks, which come out of the Side of the Stalks. They have very hairy Empalements, and are of a dirty white Colour with a few Marks of pale red. They appear in *June* and *July*, and are ſucceeded by ſhort thick Pods of a Cheſtnut Colour, containing ſeveral roundiſh Seeds which ripen in the Autumn. This is propagated by Seeds as the laſt Sort; the Plants will live thro' the Winter in the open Air in moderate Winters, but it will be proper to keep 1 or 2 Plants in Pots to be ſheltered in Winter, leſt thoſe abroad ſhould be deſtroyed by ſevere Froſt.

The 7th Sort grows naturally in *Sicily*, this riſes with an upright woody Stalk near 3 Feet high, garniſhed with Leaves like the ſixth, but they are much whiter, covered with a ſhort woolly Down, as are alſo the Stalks; the Flowers grow in cloſe Heads like the laſt, they are whiter, and are ſucceeded by ſhort Pods, which contain many yellow Seeds. It flowers in Summer, and the Seeds ripen in Autumn. This is too tender to live in the open Air in *England* through the Winter, ſo the Plants muſt be kept in Pots and houſed during the Seaſon. It is propagated as the 5th Sort, and requires the ſame Culture.

The 8th Sort grows naturally in *Sicily*; this is an annual Plant, which ſends out from the Root many ſtiff Stalks from 1 to 2 Feet high, which divide into many Branches growing diffuſed without any Order, and are garniſhed with trifoliate Leaves, having two Appendages at their Baſe, the Foot Stalks of the Flower riſe from the Wings of the Stalks; they are 2 or 3 Inches long, terminated by a Cluſter of yellow Flowers, which are ſucceeded by flat Pods 2 Inches long which are bent like an Arch, and have many Joints, ſeparating the Cells in which the Seeds are lodged. It flowers in *July*, and the Seeds ripen in Autumn, and the Plants decay ſoon after.

This is propagated by Seeds which ſhould be ſown early in *April*, on an open Bed or Border expoſed to the Sun, where the Plants are to remain: When they come up they muſt be thinned, leaving them near two Feet aſunder, and afterwards they muſt be kept clean from Weeds, which is all the Culture they require.

The 9th Sort grows naturally in *Spain* and *Portugal*; this is an annual Plant like the former, but doth not branch ſo much, the ſmall Leaves are rounder at their Ends, and they are ſmoother; the Foot Stalks are ſhorter, and ſeldom ſuſtain more than 2 Flowers, theſe are ſucceeded by 2 very narrow Pods about 2 Inches long which hang downward. This requires the ſame Culture as the former.

The 10th Sort grows naturally in the South of *France*, this hath a perennial Root, from which is ſent out ſeveral hairy Stalks near a Foot long, garniſhed with trifoliate hairy Leaves ſtanding on ſhort Foot Stalks with two Appendages at the Baſe of the Foot Stalk, the Flowers ſtand on pretty long Foot Stalks ſingly, which riſe from the End of the Branches; they have long hairy Empalements with two oblong acute-pointed Leaves immediately under them. The Flowers are yellow, ſtanding erect, and are ſucceeded by taper erect Pods an Inch and a Half long. It flowers in *June* and *July*, and the Seeds ripen in Autumn. It is propagated by Seeds, which ſhould be ſown where the Plants are to remain, and muſt be treated as the two former Sorts, but the Roots of this will continue ſeveral Years.

The 11th Sort grows naturally in *Sicily* and *Crete*, where the Pods are eaten by the poorer Inhabitants when they are young. It alſo grows about *Nice*, from whence I received the Seeds. This is an annual Plant, from whoſe Roots come out ſeveral trailing Stalks a Foot long, garniſhed at each Joint with trifoliate roundiſh Leaves having Appendages. The Flowers ſtand ſingly on long Foot Stalks, which riſe from the Side of the Branches; they are yellow and ſmall, and are ſucceeded by ſingle Pods, which are thick and arched with a deep Furrow on the Outſide. The Flowers appear in *June* and *July*, and in warm Seaſons the Seeds ripen in the Autumn; but in cold Summers they will not ripen here. This muſt have the ſame Culture as the annual Sorts before-mentioned.

The 12th Sort grows near the Borders of the Sea in *France*, *Spain*, and *Italy*; this hath a perennial Root, ſending out many ſlender Stalks about a Foot and Half long, which trail on the Ground, and are garniſhed with trifoliate Leaves at each Joint, which are ſmooth and have 2 Appendages to the Baſe of the Foot Stalk. The Flowers ſtand ſingly on very long Foot Stalks ariſing from the Wings of the Stalk, which is yellow, and are ſucceeded by ſingle Pods near 2 Inches long, having 4 leafy Membranes running longitudinally at the four Corners. This flowers in *June* and *July*. and the Seeds ripen in Autumn. It is propagated by Seed as the 10th Sort.

The 13th grows naturally in the South of *France* and in *Italy*; this is an annual Plant, from whoſe Roots are ſent forth ſeveral branching Stalks a Foot long, garniſhed with trifoliate Leaves, whoſe Lobes are acute pointed, and have 2 oblong oval Appendages at the Baſe of their Foot Stalks; the Foot Stalks of the Flowers ariſe from the Wings of the Branches, each ſuſtaining 2 yellow Flowers, which are ſucceeded by taper Pods near 2 Inches long, having 4 leafy Membranes running longitudinally their Length. It flowers in *July*, and the Seeds ripen in Autumn. It is propagated by the Seeds as the annual Sorts beforementioned.

The 14th Sort grows naturally in *Sicily*, but has been long cultivated in the *Engliſh* Gardens; it was formerly cultivated as an eſculent Plant. The Green Pods of it were dreſſed and eaten as Peas, which the Inhabitants of ſome of the northern Countries ſtill continue, but they are very coarſe, ſo not agreeable to the Taſte of thoſe who have been accuſtomed to better Fare.

It is an annual Plant which is cultivated in the Flower Gardens near *London* for Ornament. This ſends out from the Root ſeveral decumbent Stalks about a Foot long, garniſhed at each Joint with trifoliate oval Leaves, having oval Appendages at the Baſe of their Foot Stalks, from each Joint ariſe alternately the Foot Stalks of the Flowers, which are from 2 to 3 Inches long, each ſuſtaining 1 large red Flower at the Top with 3 Leaves juſt under the Flower. After the Flower fades, the Germen becomes a ſwelling taper Pod 2 Inches long, having 4 leafy Membranes or Wings running longitudinally. It flowers in *June* and *July*, and the Seeds ripen in Autumn.

The Seeds of this Sort are commonly ſown in Patches, 5 or 6 Seeds being ſown near each other, in the Borders of the Pleaſure Garden, where they are deſigned to remain. If the Seeds all grow, ſome of the Plants may be pulled up, leaving only 2 or 3 in each Patch, and afterward they will require no other Care but to keep them clean from Weeds.

The 15th Sort grows near the Borders of the Sea, in the South of *France* and *Spain*. This is a perennial Plant, ſending out from the Root many Stalks which branch out their whole Length, and are garniſhed with roundiſh trifoliate Leaves with 2 Appendages, they are covered with a woolly Down; the Flowers ſtand on ſhort Foot Stalks, 4 or 6 growing in a divided Head they are yellow and appear in *July*, and are ſucceeded by taper Pods filled with roundiſh Seeds, which ripen in Autumn. This is propagated by Seeds, which ſhould be ſown in the Spring in the Place where the Plants are to remain, and muſt be treated as the hardy perennial Sorts before mentioned.

The 16th Sort grows naturally in the Iſland of *St. James*, from whence the Seeds were firſt brought to *Europe*, but I have ſince received the Seeds from the *Cape of Good Hope*. This has a ſlender Stalk which is very woody, riſing from 2 to 3 Feet high, ſending out many ſlender herbaceous Branches, garniſhed with narrow gray Leaves, which are ſometimes trifoliate, and at others there are five narrow Lobes to each; theſe ſit cloſe to the Branches, and are inclining to be hoary. The Flowers are produced from the Side of the Stalks towards their End, on very ſlender Foot Stalks; each ſuſtaining 4 or 5 Flowers collected in a Head of yellowiſh deep purple Colour, which are ſucceeded by taper ſlender Pods little more than an Inch long, containing 5 or ſix ſmall roundiſh Seeds. This Plant flowers all the Summer and Autumn, and many Times great Part of the Winter, eſpecially if the Plants are placed in a dry airy Glaſs Caſe, where they may be free from Damp, for nothing is more prejudicial to them. It is too tender to live abroad in *England*, ſo the Plants muſt be kept in Pots, and in the Winter placed in a warm airy Glaſs Caſe; but in the Summer they ſhould be placed abroad in a ſheltered Situation. It may be eaſily propagated by Cuttings, during the Summer Seaſon, as the fifth Sort, and alſo by Seeds; but the Plants which have been two or three Times propagated by Cuttings, ſeldom are fruitful.

The 17th Sort grows naturally about *Montpelier*, it riſes with weak ſhrubby Stalks 3 or 4 Feet high, ſending out many ſlender Branches thinly garniſhed with ſmall hoary Leaves growing with 5 Lobes in Form of a Hand; they ſit cloſe to the Branches. The Flowers are produced at the Extremity of the Branches, in ſmall Heads; they are very ſmall and white, ſo make no great Appearance; they appear in *June*, and are ſucceeded by ſhort Pods containing 2 or 3 ſmall round Seeds which ripen in Autumn. This Shrub will live in the open Air if it be planted in a dry Soil and a warm Situation. It is propagated by Seeds, which will come up in any common Border.

LOTUS ARBOR. *See* Celtis.

LOVE-APPLE. *See* Lycoperſicon.

LUDVIGIA. *Lin. Gen. Pl.* 142.

The *Characters* are,

The Empalement of the Flower is of 1 *Leaf, cut into* 4 *Segments at the Top, and ſits upon the Germen. The Flower conſiſts of* 4 *Spear-ſhaped Petals which are equal, and ſpread open. In the Center of the Flower is ſituated the four-cornered Pointal, attended by* 4 *Stamina: The Germen becomes a four-cornered Fruit, crowned with the Empalement; and has* 4 *Cells, full of ſmall Seeds.*

We have but one *Species* of this Genus, in the *Engliſh* Gardens at preſent. Which is

Ludvigia *folis alternis lanceolatis. Lin. Sp. Pl.* 118. *Ludvigia* with alternate Spear-ſhaped Leaves. *Ludvigia capſulis ſubrotundis. Hort. Cliff.* 491. *Ludvigia* with roundiſh Capſules.

We have no *Engliſh* Name for this Plant; but it is very near a-kin to the *Onagra*, or Tree Primroſe.

This Plant grows naturally in *South Carolina*, from whence the late Dr. *Dale* ſent me the Seeds. It is annual and riſes with an upright branching Stalk a Foot high, garniſhed with Spear-ſhaped Leaves placed alternate. The Flowers come out ſingly at the Foot Stalks of the Leaves, they are compoſed of 4 ſmall yellow Petals, which ſpread open, ſtanding on ſhort Foot Stalks; theſe are ſucceeded by roundiſh Seed Veſſels with 4 leafy Membranes, that open in 4 Cells including many ſmall Seeds. It flowers in *July* and the Seeds ripen in the Autumn.

The Plants muſt be raiſed in a hot Bed in the Spring, and treated as hath been directed for the *Amaranthus*; for if they are not brought forward in the Spring, they ſeldom produce good Seeds in *England*.

LUFFA. *Tourn. Act. R. S.* 1709. *Momordica. Lin. Gen.* 967. *Egyptian* Cucumber.

The *Characters* are,

It hath a Bell-ſhaped Flower, conſiſting of 1 *Leaf, divided into* 5 *Parts to the Center; there are male and female Flowers on the ſame Plant. The male Flowers are produced on ſhort Foot Stalks, having no Embryos; but the female Flowers reſt on the Top of the Embryos, which afterward become a Fruit like a Cucumber to outward Appearance, but is not fleſhy; the inner Part conſiſting of many Fibres, which are elegantly netted; and there are* 3 *Cells, filled with Seeds, which are almoſt of an oval Shape.*

We have but one *Sort* of this Plant, *viz.*

Luffa. *Arabum. Tourn. Act. R.* 1709. The *Luffa* of the *Arabians*.

There are two Varieties of this Plant, one having white, and the other Black Seeds; but theſe are not diſtinct Species.

This Plant may be propagated as Cucumbers and Melons, by ſowing the Seeds on a hot Bed the Beginning of *March*; and when the Plants are come up, they muſt be pricked into a freſh hot Bed to ſtrengthen the Plants, obſerving to let them have freſh Air every Day in warm Weather, and to refreſh them frequently with Water. When the Plants have 4 or 5 Leaves, they ſhould be planted out on a hot Bed, where they are deſigned to remain, which ſhould be under Frames, and but one Plant put into each Hole; for as theſe Plants ſend forth a great Number of Side Shoots, where they are planted too cloſe, they will entangle one into the other, and become ſo thick, as to cauſe the Fruit to drop. In the Management of theſe Plants after they are planted out for good, there muſt be the ſame Care taken as for Melons and Cucumbers, with this Difference only, that theſe require a larger Share of Air in warm Weather; otherwiſe the Vines will grow weak, and will not produce Fruit.

When the Plants have ſpread, ſo as to fill the Frames on every Side, the Frames ſhould be raiſed on Bricks, and the Ends of the Plants drawn out, that they may have Room to grow; for when theſe Plants are in a vigorous State, they will ſpread 8 or 10 Feet; ſo that if they are confined, they will become ſo thick, as to rot the tender Branches which are covered from the Air, and there will be no Fruit produced.

The Fruit, when it is young, is by ſome People eaten, and made into Mangos, and preſerved in Pickle; but it hath a very diſagreeable Taſte, and is not accounted very wholeſome: Wherefore theſe Plants are ſeldom cultivated in *Europe*, except by ſuch Perſons as are curious in Botany, for Variety.

LUNARIA. *Tourn. Inſt. R. H.* 218. *Tab. Gen.* 105. *Plant.* 725. Moonwort, Sattin-Flower, or Honeſty; in *French*, *Bulbonack.*

The *Characters* are,

The Empalement of the Flower is compoſed of 4 *oblong oval ſmall Leaves, which are obtuſe and fall off; the Flower has* 4 *Petals in form of a Croſs, which are large, obtuſe, and entire: It has* 6 *Awl-ſhaped Stamina,* 4 *of theſe are the Length of the Empalement; the other* 2 *are ſhorter, terminated by erect Summits. It has an oblong oval Germen ſitting on a ſmall Foot Stalk, ſupporting a ſhort Style crowned by an entire obtuſe Stigma. The Germen becomes an erect plain compreſſed eliptical Pod ſitting on the ſmall Foot Stalk, terminated by the Style, having* 2 *Cells opening with* 2 *Valves, which are parallel, incloſing ſeveral compreſſed Kidney-ſhaped Seeds, which are bordered, ſitting in the Middle of the Pod.*

The *Species* are,

1. Lunaria *ſiliculis oblongis. Lin. Sp. Pl.* 653. Sattin Flower with oblong Pods. *Lunaria major, ſiliquâ longiore. J. B.* 2. 881. Greater Moon-wort, with longer Pods, commonly called Honeſty, or White Sattin.

2. Lunaria *ſiliculis ſubrotundis. Lin. Sp. Pl.* 653. Sattin Flower with roundiſh Pods. *Lunaria major, ſiliquâ rotundiore. J. B.* Greater Moonwort, with a rounder Pod.

3. Lunaria *foliis ſuprà decompoſitis, foliolis trifidis, ſiliculis oblongis pendulis.* Moonwort with Leaves decompounded whoſe Lobes are trifid, and oblong hanging Pods. *Cardamine foliis ſuprà decompoſitis, ſiliquis unilocularibus pendulis. Lin. Sp. Pl.* 656. Lady's Smock with Leaves decompounded above, and hanging Pods containing 1 Cell.

4. Lunaria *perennis, ſiliculis oblongis, foliis lanceolatis incanis.* Perennial Moonwort, with oblong Pods and Spear-ſhaped hoary Leaves. *Lunaria perennis, lutea, folio leucoii, ramis expanſis. Vaill.* Yellow perennial Moonwort, with a Stock Gilliflower Leaf and expanded Branches.

The 1ſt Sort grows naturally in *Hungary*, *Iſtria*, and *Auſtria*, but has been long an Inhabitant of the *Engliſh* Gardens. It is a biennial Plant, which periſhes ſoon after the Seeds are ripe; it riſes with a branching Stalk from 2 to 3 Feet high, covered with a reddiſh hairy Bark, ſending out Branches on every Side from the Ground upward; theſe are garniſhed with Heart-ſhaped Leaves placed alternately, ending in acute Points indented on their Edges, and a little hairy, the lower ſtanding on pretty long Foot Stalks, but the upper ſit cloſe to the Branches. The Flowers are produced at the Top and from the Side of the Branches toward their Ends, in Cluſters; they are compoſed of 4 purpliſh Heart-ſhaped Petals placed in Form of a Croſs. Theſe appear in *May*, and are ſucceeded by large flat roundiſh Pods with 2 Cells, incloſing two Rows of flat Kidney-ſhaped Seeds, which have a Border round them. Theſe Pods, when ripe, turn to a clear white or Sattin Colour, and are tranſparent.

The Seed Veſſels of this Plant, when they are full ripe, become very tranſparent, and of the Appearance of white Sattin, at which Time the Branches are cut off and dried, after which they are preſerved to place in the Chimneys of Halls and large Rooms, where they continue a long Time in Beauty.

This is propagated by Seeds, which ſhould be ſown in Autumn, for thoſe which are ſown in the Spring often miſcarry, or lie a long Time in the Ground. The Plants will grow in almoſt any Soil, but love a ſhady Situation; it requires no other Culture, but to keep it clean from Weeds. If the Seeds are permitted to ſcatter, the Plants will riſe without any farther Care; and if they are left unremoved, they will grow much larger than thoſe which are tranſplanted; the Roots of this Sort periſh ſoon after the Seeds are ripe.

The 2d Sort grows naturally on the Mountains in *Italy*; this hath Stalks and Leaves very like the firſt, but the Flowers are rather larger, and of a lighter purple Colour; but the principal Difference is in the Pods of this being longer and narrower than thoſe of the other. It flowers and ſeeds at the ſame Time with the firſt, and requires the ſame Culture.

The 3d Sort is an annual Plant, which grows naturally in *Egypt*. This riſes with a ſmooth branching Stalk, little more than a Foot high, garniſhed with winged Leaves, compoſed of ſeveral Pair of Lobes ranged along the Mid-rib, terminated by an odd one; theſe Lobes are of unequal Sizes, and vary in their Form; ſome of them are almoſt entire, and others are cut at their extremities into three Parts; they are ſmooth, and of a lucid green. The Flowers ſtand each on pretty long ſlender Foot Stalks, which come out from the Side, and alſo at the End of the Branches, in looſe ſmall Cluſters; they are of a purple Colour, and are ſucceeded by oblong compreſſed Pods, which hang downward. This Sort flowers in *June* and *July*, the Seeds ripen the Beginning of *September*, and the Plants decay ſoon after.

This is propagated by Seeds, which ſhould be ſown on an open Border, where the Plants are to remain; if they are ſown ſoon after they are ripe, the Plants will come up in the Autumn, and live through the Winter without Shelter, and theſe will flower early the following Summer; they may alſo be ſown in the Spring in like Manner. When the Plants come up, they will require no other Care, but to keep them clean from Weeds, and thin them where they are too cloſe. If the Seeds are permitted to ſcatter in Autumn, the Plants will riſe without Care, and may be treated the ſame Way.

The 4th Sort grows naturally in the *Archipelago*; this hath a perennial Root, from which ariſe 2 or 3 ligneous Stalks a Foot high, covered with a white hairy Bark, branching upward into ſeveral ſmaller Branches; theſe are garniſhed with Spear-ſhaped Leaves ſitting cloſe to the Branches, and a little hoary. The Branches are terminated by looſe Spikes of yellow Flowers which appear in *June*, and are ſucceeded by oblong flat Pods, containing flat Kidney ſhaped Seeds, which ripen in Autumn.

This Sort is propagated by Seeds, which, if ſown in the Autumn, will ſucceed better than in the Spring; they ſhould be ſown on a warm Border and a dry poor Soil, otherwiſe they will nor live through the Winter; but in a rubbiſhy Soil, the Plants will continue 3 or 4 Years.

LUPINUS. *Tourn. Inſt. R. H.* 392. *Tab.* 213. *Lin. Gen. P.* 774. Lupine; in *French*, *Lupin*.

The *Characters* are,

The Empalement is bifid and of 1 *Leaf; the Flower is of the Butterfly Kind; the Standard is roundiſh, Heart-ſhaped, indented at the Top, and the Sides reflexed and compreſſed. The Wings are nearly oval, and almoſt as long as the Standard; they are not fixed to the Keel, but cloſe at their Baſe; the Keel is as long as the Wings, but is narrow, falcated, and ends in a Point. It hath* 10 *Stamina joined at their Baſe in two Bodies, but as they riſe are diſtinct above, terminated by* 5 *oblong Summits. In the Center is ſituated a hairy, compreſſed, Awl-ſhaped Germen, ſupporting a riſing Style terminated by an obtuſe Stigma. The Germen becomes a large, oblong, thick ſhelled Pod with* 1 *Cell, ending with an acute Point, including ſeveral roundiſh compreſſed Seeds.*

The *Species* are,

1. Lupinus *calycibus ſemiverticillatis appendiculatis, labio ſuperiore bifido, inferiore ſubtridentato. Hort. Cliff.* 499. Lupine with Empalements half whorled and having Appendages, whoſe upper Lip is bifid, and the under one almoſt trifid. *Lupinus ſylveſtris, purpureo flore, ſemine rotundo vario. J. B.* 2. 291. Wild Lupine, with a purple Flower and a round variegated Seed, commonly called the leſſer blue Lupine.

2. Lupinus *calycibus alternis appendiculatis, labio ſuperiore bipartito, inferiore integro. Lin. Sp. Pl.* 721. Lupine with Empalements having alternate Appendages, whoſe upper Lip is divided into 2, and the under one entire. *Lupinus anguſtifolius cæruleus elatior. Raii Hiſt.* 908. Narrow leaved taller blue Lupine.

3. Lupinus *calycibus verticillatis appendiculatis, labio ſuperiore bipartito, inferiore tridentato. Hort. Cliff.* 499. Lupine with Empalements growing in Whorls, and having Appendages to them, whoſe upper Lips are cut into 2 Parts, and the under into three. *Lupinus ſylveſtris, flore luteo. C. B. P.* 348. The common yellow Lupine.

4. Lupinus *calycibus verticillatis appendiculatis, labio ſuperiore inferioreque integris. Hort. Cliff.* 499. Lupine with Whorl-ſhaped Empalements having Appendages, and the upper ond under Lip entire. *Lupinus peregrinus major, vel villoſus, cæruleus, major. C. B. P.* Foreign,

greater, hairy Lupine, with a large blue Flower, commonly called the great blue Lupine.

5. Lupinus *calycibus alternis inappendiculatis, labio ſuperiore integro, inferiore tridentato. Hort. Cliff.* 499. Lupine with alternate Empalements having no Appendages, and the upper Lip entire, but the under cut into 3 Parts. *Lupinus ſativus, flore albo. C. B. P.* 347. Garden or manured Lupine, with a white Flower.

6. Lupinus *calycibus alternis inappendiculatis, labio ſuperiore emarginato, inferiore integro. Lin. Sp. Pl.* 721. Lupine with alternate Empalements having no Appendages, the upper Lip indented, and the under entire. *Lupinus cœruleus, minor perennis, Virginianus, repens. Mor. Hiſt.* 2. p. 87. Smaller perennial, creeping, blue Lupine of *Virginia*.

The 1ſt Sort grows naturally among the Corn in the South of *France* and *Italy*, and in great Abundance in *Sicily*. This is an annual Plant, which riſes with a firm, ſtrait, channeled Stalk near 3 Feet high, divided toward the Top into ſeveral Branches, garniſhed with Hand-ſhaped Leaves, compoſed of 5, 6, or 7 oblong Lobes, which join in one Center at their Baſe, and are hairy. The Flowers are produced in Spikes at the End of the Branches, ſtanding half round the Stalk in a Sort of Whorls; they are of a light blue Colour, ſhaped like thoſe of Peas, and are ſucceeded by ſtrait taper Pods with 1 Cell, incloſing a Row of roundiſh Seeds. This Sort flowers in *June* and *July*, and the Seeds ripen in the Autumn.

It is propagated in the Borders of the Pleaſure Garden for Ornament, by ſowing the Seeds in *April* in the Places where they are to remain, and when the Plants come up they ſhould be thinned where they are too cloſe, and kept clean from Weeds, which is all the Culture they require.

The 2d Sort has much the Appearance of the firſt, but the Stalks riſe higher; the Leaves have more Lobes, and ſtand on longer Foot Stalks; the Lobes are blunt pointed, and the Seeds are variegated. This requires the ſame Culture is the firſt, and flowers at the ſame Time.

The 3d Sort is the common yellow Lupine, which has been long cultivated in the *Engliſh* Gardens, for the Sweetneſs of its Flowers. This grows naturally in *Sicily*; it riſes about a Foot high with a branching Stalk, garniſhed with Hand-ſhaped Leaves, compoſed of 9 narrow hairy Lobes, which join at their Baſe to the Foot Stalks; theſe are 4 or 5 Inches long. The Flowers are yellow, and are produced in looſe Spikes at the End of the Branches, ſtanding in Whorls round the Stalks, with Spaces between them, terminated by 3 or 4 Flowers, ſitting cloſe at the Top; theſe are ſucceeded by flattiſh hairy Pods about 2 Inches long, ſtanding erect, incloſing 4 or 5 roundiſh Seeds a little compreſſed on their Side, of a yellowiſh white, variegated with dark Spots. This Sort flowers at the ſame Time as the former, but to have a Succeſſion of the Flowers, the Seeds are ſown at different Times, *viz.* in *April*, *May*, and *June*, but thoſe only which are firſt ſown, will ripen their Seeds. It may be cultivated in the ſame Manner as the two former, and is equally hardy.

The 4th Sort is ſuppoſed to be a Native of *India*, but has been many Years in the *Engliſh* Gardens. It is an annual Plant, which riſes with a ſtrong, firm, channeled Stalk, from 3 to 4 Feet high, covered with a ſoft browniſh Down, dividing upward into ſeveral ſtrong Branches; theſe are garniſhed with Hand-ſhaped Leaves, compoſed of 9, 10, or 11 Wedge-ſhaped hairy Lobes, which are narrow at their Baſe where they join the Foot Stalk, but enlarge upward, and are rounded at the Top where they are broadeſt; the Foot Stalks of the Leaves are 3 or 4 Inches long. The Flowers are placed in Whorls round the Stalks above each other, forming a looſe Spike, which proceeds from the End of the Branches; they are large and of a beautiful blue Colour, but have no Scent. Theſe appear in *July*, and the Seeds ripen in the Autumn. The Pods of this Sort are large, almoſt an Inch broad and 3 Inches long, incloſing three large roundiſh Seeds compreſſed on their Sides, very rough and of a purpliſh brown Colour. There is a Variety of this with Fleſh-coloured Flowers, which is commonly called the Roſe Lupine; it differs from the blue only in the Colour of the Flower, but this Difference is permanent, for neither of the Sorts vary.

This is generally late in the ripening of the Seeds, ſo that unleſs the Autumn proves warm and dry they do not ripen; therefore the beſt Way to have good Seeds, is to ſow them in *September* cloſe to a warm Wall on dry Ground, where they will live through our ordinary Winters; and theſe Plants will flower early the following Summer, ſo there will be Time for the Seeds to ripen before the Rains fall in the Autumn, which frequently cauſes the Seeds to rot which are not ripe. If a few of the Seeds of both theſe Varieties, are ſown in ſmall Pots the Beginning of *September*, and when the Froſts begin, the Pots removed into a common hot Bed Frame, where they may be protected from hard Froſt, but enjoy the free Air in mild Weather, the Plants may be ſo ſecured, and in the Spring they may be ſhaken out of the Pots, preſerving the Earth to their Roots, and planted in a warm Border, where they will flower early, and produce very good Seeds.

The 5th Sort grows naturally in the *Levant*, but is cultivated in ſome Parts of *Italy*, as other Pulſe for Food. This hath a thick upright Stalk about 2 Feet high, which divides toward the Top into ſeveral ſmaller Branches; theſe are hairy, and garniſhed with Hand ſhaped Leaves, compoſed of 7 or 8 narrow oblong Lobes, which are hairy and join at their Baſe, of a dark grayiſh Colour, and have a ſilvery Down. The Flowers are produced in looſe Spikes at the End of the Branches, they are white, and ſit cloſe to the Stalk; theſe are ſucceeded by hairy ſtrait Pods about 3 Inches long, a little compreſſed on the Sides; theſe contain 5 or 6 flattiſh Seeds which are white, having a little Cavity like a Navel, in that Part which is fixed to the Pod. This Sort flowers in *July*, and the Seeds ripen in Autumn. It is an annual Plant, which is cultivated for Ornament in the Pleaſure Garden. The Seeds muſt be ſown in the Places where the Plants are to remain, and may be treated as the firſt Sort.

The 6th Sort grows naturally in *Virginia*, and other of the northern Parts of *America*. This hath a perennial creeping Root, from which ariſe ſeveral erect channeled Stalks a Foot and a Half high, ſending out 2 or 3 ſmall

Side Branches; theſe are garniſhed with Hand ſhaped Leaves, compoſed of 10 or 11 Spear-ſhaped Lobes, which join at their Baſe; theſe ſtand on very long Foot Stalks, and have a few Hairs on their Edges. The Flowers grow in long looſe Spikes, which terminate the Stalks, and are placed without Order on every Side the Stalk; they are of a pale blue Colour, and ſtand on ſhort Foot Stalks. Theſe appear in *June*, and the Seeds ripen in *Auguſt*, which are ſoon ſcattered if they be not gathered; for after a little Moiſture, the Sun cauſes the Pods to open with an Elaſticity, and caſt out the Seeds to a Diſtance all round. This Sort is propagated by Seeds as the former, which ſhould be ſown where the Plants are to remain; for although the Root is perennial, yet it runs ſo deep into the Ground, that it cannot be taken up entire; and if the Root is cut or broken, the Plant never thrives well after. I have traced ſome of the Roots of this Plant, which have been 3 Feet deep in the Ground in one Year from Seed; they alſo ſpread out far on every Side, ſo that they muſt have Room, therefore the young Plants ſhould not be left nearer than 3 Feet. If this Plant is in a light dry Soil, the Roots will continue ſeveral Years, and produce many Spikes of Flowers; and although the uſual Seaſon of flowering is in *June* and *July*, yet when Rain happens to fall in *Auguſt*, there are frequently freſh Stalks ariſe from the Roots, which flower the End of *September*, or begining of *October*.

The Seeds of the 5th Sort are uſed in Medicine, they have a bitter Taſte, ſo open, digeſt, diſſolve, and cleanſe; and if they are ſteeped in Water for ſome Days till they have loſt their Bitterneſs, they may be eaten out of Neceſſity, but they are ſuppoſed to breed groſs Humours, and are hard of Digeſtion. Some Women uſe the Flower of the Seed mixed with the Juice of Lemons, and a little *Alumen ſaccharinum*, made into the Form of ſoft Ointment, to make the Face ſmooth, and look more amiable.

The ſmall blue Lupine is frequently ſown in *Italy*, to dreſs and manure the Ground, eſpecially that which is intended for Vineyards; where, if they have Time, the Ground is ſown with Lupines, which grow till they begin to flower; then they cut them down and plough them into the Ground, where the Stalks rot with the Winter's Rain; but it is doubtful whether this is any real Benefit to the Ground, for there are few Plants which draw and impoveriſh Ground ſo much as Lupines; therefore the Dreſſing they yield, is ſcarce an Equivalent for what they have drawn from the Ground: But when there is not Time for this Operation, they parboil the Seeds to prevent their growing, and ſow them on the Ground before it is ploughed, allowing 16 Buſhels to an Acre of Land, and this dreſſing is preferable to the former.

All the Sorts of Lupines make a pretty Appearance ween they are in flower, but the yellow Sort is preferred for its Sweetneſs, though the Flowers of this are of ſhort Duration, eſpecially in warm Weather; therefore the Seeds of this ſhould be ſown at ſeveral Times, that there may be a Succeſſion of Flowers through the Seaſon, for they will continue flowering till they are ſtopped by hard Froſt; and thoſe which flower in Autumn will continue in Beauty a longer Time than the early ones. If ſome of theſe Seeds are ſown in Autumn on a warm Border, the Plants will often live through the Winter, and flower early in the Spring.

LUPULUS, *Tourn. Inſt. R. H.* 535. *Tab.* 309. *Humulus. Lin. Gen. Pl.* 989. The Hop; in *French Houblon.*

The *Characters* are,

The male and female Flowers are on different Plants. The Empalement of the male Flower, is compoſed of 5 *ſmall concave obtuſe Leaves; it hath no Petal, but* 5 *ſhort hairy Stamina; terminated by oblong Summits. The female Flowers have a general four pointed acute Perianthium, and a ſeparate oval one of* 4 *Leaves, including* 8 *Flowers; each of theſe have an Empalement of* 1 *Leaf, cloſed at the Baſe. Theſe have neither Petal or Stamina, but a ſmall Germen ſituated in the Center, ſupporting* 2 *Awl-ſhaped Styles, crowned by acute reflexed ſpreading Stigmas. The Germen turns to a roundiſh Seed covered with a thin Skin, incloſed in the Baſe of the Empalement.*

We have but one *Species* of this Genus, *viz.*

LUPULUS *mas et femina. C. B. P.* 298. Male and female Hop.

The male Hop grows wild by the Side of Hedges and on Banks, in many Parts of *England*; the young Shoots of theſe Plants are often gathered by the poor People, and boiled as an eſculent Herb, but theſe muſt be taken very young, otherwiſe they are tough and ſtringy. This Sort is eaſily diſtinguiſhed by the Flowers, which are ſmall, and hang in long looſe Bunches from the Side of the Stalks, abounding with Farina on their Summits; theſe have no Hops ſucceeding to the Flowers.

The female Hop is the Sort which is cultivated for Uſe; of this Sort, the People who cultivate them reckon three different Varieties: As firſt, the long and ſquare Garlick Hop, the long white Hop, and the oval Hop, all which are indifferently cultivated in *England*, but of the male Hop there is no different Varieties.

There being the greateſt Plantation of Hops in *Kent* that are in any Country of *England*, it is very probable, that their Method of planting and ordering them ſhould be the beſt.

As for the Choice of their Hop Grounds, they eſteem the richeſt and ſtrongeſt Grounds as the moſt proper; they chooſe a warm dry Soil, that a has a good Depth of Hazel Mould; and if it be rocky within two or three Feet of the Surface, the Hops will proſper well; but they will by no Means thrive on a ſtiff Clay, or ſpongy wet Land.

If it may be, chooſe a Piece of Meadow or lay Ground to plant Hops on, ſuch as has not been tilled or ſown for many Years, or an old decayed Orchard; for Land that is worn out by long bearing of Corn, will require abundance of Dung, to bring it into any tolerable Condition to bear a Crop of Hops.

The *Kentiſh* Planters accounting new Land beſt for Hops, they plant their Hop Gardens with Apple Trees at a large Diſtance, and with Cherry Trees between; and when the Land hath done its beſt for Hops, which they reckon it will in about 10 Years, the Trees may begin to bear. The Cherry Trees laſt about 30 Years, and by that Time the Apple Trees are large, they cut down the Cherry Trees.

The *Eſſex* Planters account a moory Land the propereſt for Hops, though there are ſeveral other Sorts of Soil that are eſteemed very good.

Some account that Land that has a roſſelly Top, and a Brick earth Bottom, the beſt; a true Roſſel or light Sand, is what they generally plant in, whether it be white or black.

Moory Land is of different Sorts, ſome being fixed and heavy, ſo as to crack in Summer; and ſome ſo light, that in dry Seaſons it will blow away with the Wind; and ſome are of a middle Conſiſtence, being compoſed of both.

Theſe Moors for Goodneſs and Value, are according to the Nature and Goodneſs of the Soil that is underneath them; which being flung up upon the Surface, will make a very good Mixture, it being beſt to fling the under Soil downward for Hops; becauſe they naturally root downwards, ſometimes 4 or 5 Yards deep, and therefore the deepeſt and richeſt Soil is beſt for them.

Few are acquainted with the Value of Moors, becauſe they do not ſearch into the Bottom of them, by Reaſon of the Expenſiveneſs of doing it, and the Difficulty of carrying off the Water.

If the Land be moſt, it ought to be laid up in high Ridges, and to be well drained, and the Drains kept clear and open, eſpecially in Winter, that the Water do not rot or too much chill the Roots.

If the Land be ſour or cold, it will be very much helped by burning it; and if the Haulm and Strings of the Hops be burnt every Year, and ſome of the Paring or Sides of the Garden or other Earth be laid on them as they burn, and then more Haulm be laid over that, and ſo continued Layer upon Layer, it will make an excellent Compoſt to make the Hills with.

As to the Situation of a Hop Ground, one that inclines to the South or Weſt is the moſt eligible; but if it be expoſed to the North Eaſt or South Weſt Winds, there ſhould be a Shelter of ſome Trees at a Diſtance; becauſe the North Eaſt are apt to nip the tender Shoots in the Spring, and the South Weſt frequently break and blow the Poles at the latter End of the Summer, and very much endanger the Hops.

Hops require to be planted in an open Situation, that the Air may freely paſs round and between them, to dry up and diſſipate the Moiſture, whereby they will not be ſo ſubject to Fire Blaſts, which often deſtroy the Middles of large Plantations, while the Outſides remain unhurt.

As for the Preparation of the Ground for planting, it ſhould, the Winter before, be ploughed and harrowed even; and then lay upon it in Heaps, a good Quantity of freſh rich Earth, or well rotted Dung and Earth mixed together, ſufficient to put half a Buſhel in every Hole to plant the Hops in, unleſs the natural Ground be very freſh and good.

Then lay a Line acroſs it from the Hedge, in which Knots have been tied, at the Diſtance you deſign your Hop Hills to be at, about 8 or 9 Feet Diſtance the whole Length of the Ground, and place a ſharp pointed Stick at every Knot; then lay aſide the Line, and with two forked Sticks of about 8 or 9 Feet long, you may from the 1ſt Row ſet out the whole Ground, by applying the 2 Forks to 2 of the Sticks which were firſt ſet up, and placing another Row at the Ends where the forked Stalks meet triangular-wiſe; then you ſhould dig a Hole at every Stick about a Foot and a Half wide, and fill it full of the good Earth you brought in.

If you plough the Ground with Horſes between the Hills, it will be beſt to plant them in Squares Chequerwiſe; but the *Quincunx* Form is the moſt beautiful, and it will alſo be better for the Hop; but if the Ground be ſmall, that it may be done with the Breaſt Plough or Spade, it will do very well; but which Way ſoever you make Uſe of, a Stake ſhould be ſtuck down at all the Places where the Hills are to be made.

Perſons ought to be very curious in the Choice of the Plants and Sets, as to the Kind of Hop; for if the Hop Garden be planted with a Mixture of ſeveral Sorts of Hops that ripen at ſeveral Times, it will cauſe a great deal of Trouble, and be a great Detriment to the Owner.

The two beſt Sorts are the white and the gray Bind; the latter is a large ſquare Hop, more hardy, and is the more plentiful Bearer, and ripens later than the former.

There is alſo another Sort of the white Bind, which ripens a Week or ten Days before the common; but this is tenderer and a leſs plentiful Bearer, but it has this Advantage, it comes firſt to Market.

But if three Grounds, or three diſtant Parts of one Ground, be planted with theſe three Sorts, there will be this Conveniency, that they may be picked ſucceſſively as they become ripe.

The Sets ought to be procured out of Grounds that are entirely of the ſame Sort you would have, they ſhould be 5 or 6 Inches long, with three or more Joints or Buds on them, all the old Bind and hollow Part of the Set being cut off.

If there be a Sort of Hop you value, and would increaſe Plants and Sets from, the ſuperfluous Binds may be laid down when the Hops are tied, cutting off the Tops, and burying them in the Hill; or when the Hops are dreſſed, all the Cuttings may be ſaved, and laid in Rows in a Bed of good Earth; for almoſt every Part will grow, and become a good Set the next Spring.

Some have tried to raiſe a Hop Ground by ſowing Seeds, but that turns to no Account, becauſe that Way is not only tedious, but the Hops ſo produced are commonly of different Kinds, and many of them wild and barren.

As to the Seaſons of planting Hops, the *Kentiſh* Planters beſt approve the Months of *October* and *March*, both which ſucceed very well; but the common Sets are not to be had in *October*, unleſs from ſome Ground that is to be dug up and deſtroyed; and likewiſe there is ſome Danger that the Sets may be roted, if the Winter prove very wet; but the moſt uſual Time of procuring them is in *March*, when the Hops are cut and dreſſed.

As to the Manner of planting the Sets, you ſhould put 5 good Sets in every Hole with a ſetting Stick; one is to be placed in the Middle, and the reſt round about ſloping, the Tops meeting at the Center; they muſt ſtand even with the Surface of the Ground; let them be preſſed cloſe with the Hand, and covered with fine Earth, and a Stick ſhould be placed on each Side the Hill, to ſecure it.

The Ground being thus planted, all that is to be done more that Summer, is to keep the Hills clear from

Weeds, and to dig up the Ground about the Month of *May*, and to gather up the Stones, if more are turned up by diging, to raiſe a ſmall Hill round about the Plants; and in *June* you muſt twiſt the young Binds or Branches together into a Bunch or Knot, for if they are tied up to ſmall Poles, the firſt Year, in order to have a few Hops from them, it will not countervail the weakening of the Plants.

A Mixture of Compoſt or Dung being prepared for your Hop Ground, the beſt Time for laying it on, if the Weather prove dry, is about *Michaelmas*, that the Wheels of the Dung Cart may not injure the Hops, nor furrow the Ground: If this be not done then, you muſt be obliged to wait till the Froſt has hardened the Ground, ſo that it will bear the Dung Cart; and this is alſo the Time to carry on your new Poles, to recruit thoſe that are decayed, and to be caſt out every Year.

If you have good Store of Dung, the beſt Way will be to ſpread it in the Alleys all over the Ground, and to dig it in the Winter following. The Quantity they will require, will be 40 Loads to an Acre, reckoning about 30 Buſhels to the Load.

If you have not Dung enough to cover all the Ground in one Year, you may lay it on one Part one Year, and on the reſt in another, or a third; for there is no Occaſion to dung the Ground after this Manner, oftener than once in three Years.

Thoſe who have but a ſmall Quantity of Dung, uſually content themſelves with laying on about 20 Loads on an Acre every Year; this they lay only on the Hills, either about *November*, or in the Spring; which laſt ſome account the beſt Time, when the Hops are dreſſed, to cover them after they are cut; but if it be done at this Time, the Compoſt or Dung ought to be very well rotted and fine.

As to the dreſſing the Hops, when the Hop Ground is dug in *January* or *February*, the Earth about the Hills, and very near them, ought to be taken away with a Spade, that you may come the more conveniently at the Stock to cut it.

About the End of *February*, if the Hops were planted the Spring before, or if the Ground be weak, they ought to be dreſſed in dry Weather; but elſe, if the Ground be ſtrong and in Perfection, the Middle of *March* will be a good Time; and the latter End of *March*, if it be apt to produce over-rank Binds, or the Beginning of *April*, may be ſoon enough.

Then having with an Iron Picker cleared away all the Earth out of the Hills, ſo as to make the Stock bear to the principal Roots, with a ſharp Knife you muſt cut off all the Shoots which grew up with the Binds the laſt Year; and alſo all the young Suckers, that none be left to run in the Alley and weaken the Hill. It will be proper to cut one Part of the Stock lower than the other, and alſo to cut that Part low, that was left higheſt the preceding Year. By purſuing this Method, you may expect to have ſtronger Buds, and alſo keep the Hill in good Order.

In dreſſing thoſe Hops that have been planted the Year before, you ought to cut off both the dead Tops, and the young Suckers which have ſprung up from the Sets, and alſo to cover the Stocks with a Hive with fine Earth a Finger's Length in Thickneſs.

About the Middle of *April* the Hops are to be poled, when the Shoots begin to ſprout up; the Poles muſt be ſet to the Hills deep into the Ground, with a ſquare Iron Pitcher or Crow, that they may the better endure the Winds; three Poles are ſufficient for one Hill. Theſe ſhould be placed as near the Hills as may be, with their bending Tops turned outwards from the Hill, to prevent the Binds from entangling; and a Space between two Poles ought to be left open to the South, to admit the Sun Beams.

The Poles ought to be in Length 16 or 20 Feet, more or leſs, according as the Ground is in Strength; and great Care is to be taken not to overpole a young or weak Ground, for that will draw the Stock too much, and weaken it. If a Ground be overpoled, you are not to expect a good Crop from it; for the Branches which bear the Hops will grow very little, till the Binds have overreached the Poles, which they cannot do when the Poles are too long. Two ſmall Poles are ſufficient for a Ground that is young.

If you wait till the Sprouts or young Binds are grown to the Length of a Foot, you will be able to make a better Judgment where to Place the largeſt Poles; but if you ſtay till they are ſo long as to fall into the Alleys, it will be injurious to them, becauſe they will entangle one with another, and will not claſp about the Pole ſo readily.

Maple or Aſpen Poles are accounted the beſt for Hops, on which they are thought to proſper beſt, becauſe of their Warmth; or elſe, becauſe the climbing of the Hop is furthered by Means of the Roughneſs of the Bark. But for Laſtingneſs, Aſhen or Willow Poles are preferable; but Cheſnut Poles are the moſt durable of all,

If, after the Hops are grown up, you find any of them have been under-poled, taller Poles may be placed near thoſe that are too ſhort, to receive the Binds from them.

As to the tying of Hops, the Buds that do not claſp of themſelves to the neareſt Pole when they are grown to three or four Feet high, muſt be guided to it by the Hand, turning them to the Sun, whoſe Courſe they will always follow. They muſt be bound with withered Ruſhes, but not ſo cloſe as to hinder them from climbing up the Pole.

This you muſt continue to do till all the Poles are furniſhed with Binds, of which, two or three are enough for a Pole; and all the Sprouts and Binds that you have no Occaſion for are to be plucked up; but if the Ground be young, then none of theſe uſeleſs Binds ſhould be plucked up, but ſhould be wrapt up together in the Middle of the Hill.

When the Binds are grown beyond the Reach of your Hands, if they forſake the Poles, you ſhould make uſe of a Stand Ladder in tying them up.

Some adviſe, that if the Binds be very ſtrong, and overgrow the Poles very much, you ſtrike off their Heads with a long Switch, to increaſe their branching below.

Towards the latter End of *May*, when you have made an End of tying them, the Ground muſt have the Summer digging; this is done by caſting up with the

Spade ſome fine Earth into every Hill, and a Month after this is done, you muſt pare the Alleys with a Shovel, and make the Hills up to a convenient Bigneſs.

It is not at all to be doubted, but that a thorough Watering would be of very great Advantage to Hops in a hot dry Summer; but it is ſo much Charge and Trouble to do this, that unleſs you have a Stream at Hand to flow the Ground, it is ſcarce practicable.

When the Hops blow, you ſhould obſerve if there be any wild barren Hills among them, and mark them, by driving a ſharpened Stick into every ſuch Hill, that they may be digged up and replanted.

Hops, as well as other Vegetables, are liable to Diſtempers and Diſaſters, and among the reſt, to the Fen.

The Rev. Dr. *Hales*, in his excellent Treatiſe of *Vegetable Staticks*, treating of Hops, gives us the following Account of the State of Hops in *Kent*, in the Year 1725, that he received from Mr. *Auſten* of *Canterbury*, which is as follows:

In mid *April* not half the Shoots appeared above Ground, ſo that the Planters knew not how to pole them to the beſt Advantage.

This Defect of the Shoot, upon opening the Hills, was found to be owing to the Multitude and Variety of Vermin that lay preying upon the Roots; the Increaſe of which was imputed to the long and almoſt uninterrupted Series of dry Weather for three Months before. Towards the End of *April*, many of the Hop Vines were infeſted with Flies.

About the 20th of *May* there was a very unequal Appearance, ſome Vines being run 7 Feet, others not above three or four; ſome juſt tied to the Poles, and ſome not viſible; and this diſproportionate Inequality in their Size, continued through the whole Time of their Growth.

The Flies now appeared upon the Leaves of the forwardeſt Vines, but not in ſuch Numbers here, as they did in moſt other Places. About the Middle of *June* the Flies increaſed, yet not ſo as to endanger the Crop; but in diſtant Plantations they were exceedingly multiplied, ſo as to ſwarm towards the End of the Month.

June the 27th ſome Specks of Fen appeared. From this Day to the 9th of *July* was very dry Weather. At this Time, when it was ſaid, that the Hops in moſt Parts of the Kingdom looked black and ſickly, and ſeemed paſt Recovery, ours held it out pretty well, in the Opinion of the moſt ſkilful Planters.

The great Leaves were indeed diſcoloured, and a little withered, and the Fen was ſomewhat increaſed. From the 9th of *July* to the 23d, the Fen increaſed a great deal; but the Flies and Lice decreaſed, it raining much daily. In a Week more, the Fen which ſeemed to be almoſt at a Stand, was conſiderably increaſed, eſpecially in thoſe Grounds where it firſt appeared.

About the Middle of *Auguſt* the Vines had done growing both in Stem and Branch, and the forwardeſt began to be in the Hop, the reſt in Bloom; the Fen continued ſpreading where it was not before perceived; and not only the Leaves, but many of the Burs were alſo tainted with it.

About the 20th of *Auguſt* ſome of the Hops were infected with the Fen, and whole Branches corrupted by it. Half the Plantations had pretty well eſcaped hitherto, and from this Time the Fen increaſed but little; but ſeveral Days Wind and Rain the following Week ſo diſtorted them, that many of them began to dwindle, and at laſt came to nothing; and of thoſe that then remained in Bloom, ſome never turned to Hops; and of the reſt which did, many of them were ſo ſmall, that very little exceeded the Bigneſs of a good thriving Bur.

We did not begin to pick till the 8th of *September*, which is eighteen Days later than we began the Year before; the Crop was little above two hundred on an Acre round, and not good. The beſt Hops ſold this Year at *Way-hill*, for 16 *l.* the Hundred.

The Rev. Dr. *Hales*, in his aforeſaid Treatiſe, gives us an Account of the following Experiment that he made on Hop Vines. He tells us, That in *July* he cut off two thriving Hop Vines near the Ground, in a thick ſhady Part of the Garden, the Pole ſtill ſtanding; he ſtripped the Leaves off from one of theſe Vines, and ſet their Stems in known Quantities of Water in little Bottles; that with Leaves imbibed in a twelve Hours Day four Ounces, and that without Leaves three Fourths of an Ounce.

He took another Hop Pole with its Vines on it, and carried it out of the Hop Ground into a free and open Expoſure; theſe imbibed and perſpired as much more as the former in the Hop Ground, which is, doubtleſs, the Reaſon why the Hop Vines on the Outſides of Gardens, where they are moſt expoſed to the Air, are ſhort and poor, in Compariſon of thoſe in the Middle of the Ground, *viz.* becauſe being much dried, their Fibres harden ſooner, and therefore they cannot grow ſo kindly as thoſe in the Middle of the Ground, which, by Shade, are always kept moiſter, and more ductile.

The ſame curious Author proceeds as followeth: Now there being 1000 Hills in an Acre of Hop Ground, and each Hill having three Poles, and each Pole three Vines, the Number of Vines will be 9000, each of which perſpiring four Ounces, the Sum of all the Ounces perſpired by an Acre in twelve Hours Day will be 36000 Ounces = 15750000 Grains = 62007 Cube Inches, or 220 Gallons, which divided by 6272640, the Number of ſquare Inches in an Acre, it will be found, that the Quantity of Liquor perſpired by all the Hop Vines will be equal to an Area of Liquor as broad as an Acre, and $\frac{1}{101}$ Part of an Inch deep, beſides what evaporated from the Earth.

And this Quantity of Moiſture, in a kindly State of the Air, if daily carried off, is a ſufficient Quantity to keep the Hops in a healthy State; but in a rainy moiſt State of Air, without a due Mixture of dry Weather, too much Moiſture hovers about the Hops, ſo as to hinder, in ſome Meaſure, the kindly Perſpiration of the Leaves, whereby the ſtagnating Sap corrupts, and breeds mouldy Fen, which often ſpoils vaſt Quantities of flouriſhing Hop Grounds.

This was the Caſe in the Year 1723, when for ten or fourteen Days almoſt continual Rains fell, about the latter half of *July*, after four Months dry Weather, upon which the moſt flouriſhing and promiſing Hops were all infected with Mould, or Fen, in their Leaves and Fruit, while the then poor and unpromiſing Hops eſcaped and produced Plenty, becauſe they, being ſmall, did not perſpire ſo great a Quantity as others, nor did they confine the perſpired Vapour, ſo much as the large thriving Vines did in their ſhady Thickets.

This Rain on the then warm Earth, made the Graſs ſhoot out as faſt as if it were in a hot Bed, and the Apples grew ſo precipitately, that they were of a flaſhy Conſtitution, ſo as to rot more remarkably than had ever been remembered.

The Planters obſerve, That when a Mould, or Fen, has once ſeized any Part of the Ground, it ſoon runs over the Whole, and that the Graſs, and other Herbs under the Hops, are infected with it, probably, becauſe the ſmall Seeds of this quick-growing Mould, which ſoon come to Maturity, are blown over the whole Ground, which ſpreading of the Seed may be the Reaſon why ſome Grounds are infected with Fen for ſeveral Years ſucceſſively, *viz.* from the Seeds of the laſt Year's Fen. Might it not then be adviſed to burn the fenny Hop Vines, as ſoon as the Hops are picked, in hopes thereby to deſtroy ſome of the Seed of the Mould?

Mr. *Auſten* of *Canterbury*, obſerves Fen to be more fatal to thoſe Grounds that are low and ſheltered, than to the high and open Grounds, to thoſe that are ſhelving to the North, than to thoſe ſhelving to the South; to the Middle of Grounds, than to the Outſides; to the dry and gentle Grounds, than to the moiſt and ſtiff Grounds.

This was very apparent throughout the Plantations where the Land had the ſame Workmanſhip and Help beſtowed upon it, and was wrought at the ſame Time. But if in either of theſe Caſes there was a Difference, it had a different Effect, and the low and gentle Grounds, that lay neglected, were then ſeen leſs diſtempered than the open and moiſt, which were carefully managed and looked after.

The Honey Dews are obſerved to come about the 11th of *June*, which, by the Middle of *July*, turn the Leaves black, and make them ſtink.

The ſaid Dr. *Hales* relates, That in the Month of *July* (the Seaſon for Fire Blaſts, as the Planters call them) he has ſeen the Vines in the Middle of the Hop Ground ſcorched up almoſt from one End of a large Ground to the other, when a hot Gleam of Sun-ſhine has come immediately after a Shower of Rain, at which Time Vapours are all ſeen with the naked Eye, but eſpecially with reflecting Teleſcopes, to aſcend ſo plentifully as to make a clear and diſtinct Object, become immediately very dim and tremulous; nor was there any dry gravelly Vein in the Ground along the Courſe of this Scorch; it was therefore, probably, owing to the much greater Quantity of ſcorching Vapours in the Middle, than the Outſides of the Ground, and that being a denſer Medium, it was much hotter than a more rare Medium.

And, perhaps, the great Volume of aſcending Vapours might make the Sun Beams converge a little towards the Middle of the Ground, that being a denſer Medium, and thereby increaſe the Heat conſiderably; for he obſerved, That the Courſe of the ſcorched Hops was in Lines at right Angles to the Sun Beams about Eleven o'Clock, at which Time the hot Gleam was.

The Hop Ground was in a Valley which ran from South Weſt to North Eaſt, and to the beſt of his Remembrance, there was but little Wind, and that in the Courſe of the Scorch; but had there been ſome orher gentle Wind, either North or South, it is not improbable but that the North Wind gently blowing the Volume of riſing Wreak on the South Side of the Ground, that Side might have been moſt ſcorched, and ſo *vice verſa*.

As to particular Fire Blaſts, which ſcorch here and there a few Hop Vines, or one or two Branches of a Tree, without damaging the next adjoining, what Aſtronomers obſerve, may hint to us no very improbable Cauſe of it, *viz.* They frequently obſerve (eſpecially with reflecting Teleſcopes) ſmall ſeparate Portions of pellucid Vapours floating in the Air, which, though not viſible to the naked Eye, are yet conſiderably denſer than the circumambient Air; and Vapours of ſuch a Degree of Denſity may very probably either acquire ſuch a ſcalding Heat from the Sun, as will ſcorch what Plants they touch, eſpecially the more tender.

(An Effect which the Gardeners about *London* have too often found, to their Coſt, when they have incautiouſly put Bell Glaſſes over their Cauliflowers early in a froſty Morning, before the Dew was evaporated off them, which Dew, being raiſed by the Sun's Warmth, and confined within the Glaſs, did there form a denſe, tranſparent, ſcalding Vapour, which burned and killed the Plants:)

Or, perhaps, the upper or lower Surface of theſe tranſparent ſeparate flying Volumes of Vapours, may, approach ſo near to an Hemiſphere, or Hemicylinder, as thereby to make the Sun Beams converge, ſo as often to ſcorch the more tender Plants they ſhall fall on, and ſometimes alſo Parts of the more hardy Plants and Trees, in Proportion to the greater or leſſer Convergency of the Sun's Rays.

The learned *Boerhaave*, in his *Theory of Chymiſtry*, p. 245, obſerves, That thoſe white Clouds which appear in Summer Time, are, as it were, ſo many Mirrours, and occaſion exceſſive Heat. Theſe cloudy Mirrours are ſometimes round, ſometimes concave, polygonous, *&c.* When the Face of Heaven is covered with ſuch white Clouds, the Sun ſhining among them, muſt, of Neceſſity, produce a vehement Heat, ſince many of his Rays, which would otherwiſe, perhaps, never touch our Earth, are hereby reflected to us. Thus, if the Sun be on one Side, and the Clouds on the oppoſite one, they will be perfect Burning Glaſſes, and hence the Phænomena of Thunder.

I have ſometimes (continues he) obſerved a Kind of hollow Clouds full of Hail and Snow, during the Continuance of which the Heat was extreme, ſince, by ſuch Condenſation, they were enabled to reflect more ſtrongly. After this came a ſharp Cold, and then the Clouds diſcharged their Hail in great Quantity, to which ſucceeded a moderate Warmth. Frozen concave Clouds, therefore, by their great Reflexions, produce a vigorous Heat, and the ſame, when reſolved, exceſſive Cold.

From which the Rev. Dr. *Hales* obſerves as follows:

Hence we ſee, that Blaſts may be occaſioned by the Reflexions of the Clouds, as well as by the above-mentioned Refraction of denſe tranſparent Vapours.

About the Middle of *July* Hops begin to blow, and will be ready to gather about *Bartholomew Tide*. A Judgment may be made of their Ripeneſs, by their ſtrong Scent, their Hardneſs and the browniſh Colour of their Seed.

When by theſe Tokens they appear to be ripe, they muſt be picked with all the Expedition poſſible, for if at this Time a Storm of Wind ſhould come, it would do them great Damage, by breaking the Branches, and bruiſing and diſcolouring the Hops ; and it is very well known, that Hops, being picked green and bright, will ſell for a third Part more than thoſe which are diſcoloured and brown.

The moſt convenient Way of picking them is into a long ſquare Frame of Wood, called a Bin, with a Cloth hanging on Tenter Hooks within it, to receive the Hops as they are picked.

The Frame is compoſed of four Pieces of Wood joined together, ſupported by four Legs, with a Prop at each End to bear up another long Piece of Wood, placed at a convenient Height over the Middle of the Bin; this ſerves to lay the Poles upon, which are to be picked.

This Bin is commonly eight Feet long, and three Feet broad ; two Poles may be laid on it at a Time, and ſix or eight Perſons may work at it, three or four on each Side.

It will be beſt to begin to pick the Hops on the Eaſt or North Side of your Ground, if you can do it conveniently ; this will prevent the South Weſt Wind from breaking into the Garden.

Having made Choice of a Plot of the Ground containing eleven Hills ſquare, place the Bin upon the Hill which is in the Center, having five Hills on each Side; and when theſe Hills are picked, remove the Bin into another Piece of Ground of the ſame Extent, and ſo proceed till the whole Hop Ground is finiſhed.

When the Poles are drawn up to be picked, you muſt take great Care not to cut the Binds too near the Hills, eſpecially when the Hops are green, becauſe it will make the Sap to flow exceſſively.

And if the Poles do not come up without Difficulty, they ſhould be raiſed by a Piece of Wood in the Nature of a Lever, having a forked Piece of Iron with Teeth on the Inſide, faſtened within two Feet of the End.

The Hops muſt be picked very clean, *i. e.* free from Leaves and Stalks, and, as there ſhall be Occaſion, two or three Times in a Day the Bin muſt be emptied into a Hop Bag made of coarſe Linen Cloth, and carried immediately to the Oaſt, or Kiln, in order to be dried; for if they ſhould be long in the Bin, or Bag, they will be apt to heat, and be diſcoloured.

If the Weather be hot, there ſhould no more Poles be drawn than can be picked in an Hour, and they ſhould be gathered in fair Weather, if it can be, and when the Hops are dry ; this will ſave ſome Expence in Firing, and preſerve their Colour better than when they are dried.

The beſt Method of drying Hops is with Charcoal on an Oaſt, or Kiln, covered with Hair Cloth, of the ſame Form and Faſhion that is uſed for drying Malt. There is no Need to give any particular Directions for the making it, ſince every Carpenter, or Bricklayer, in thoſe Countries where Hops grow, or Malt is made, knows how to build them.

The Kiln ought to be ſquare, and may be of ten, twelve, fourteen, or ſixteen Feet over at the Top, where the Hops are laid, as your Plantations requires, and your Room will allow. There ought to be a due Proportion between the Height and the Breadth of the Kiln, and the Beguels of the Steddle where the Fire is kept, *viz.* if the Kiln be twelve Feet ſquare on the Top, it ought to be nine Feet high from the Fire, and the Steddle ought to be ſix Feet and a Half ſquare, and ſo proportionable in other Dimenſions.

The Hops muſt be ſpread even upon the Oaſt a Foot thick or more, if the Depth of the Curb will allow it, but Care is to be taken not overload the Oaſt, if the Hops be green or wet.

The Oaſt ought to be firſt warmed with a Fire before the Hops are laid on, and then an even ſteady Fire muſt be kept under them ; it muſt not be too fierce at firſt, leſt it ſcorch the Hops; nor muſt it be ſuffered to ſink or ſlacken, but rather be increaſed till the Hops be nearer dried, leſt the Moiſture, or Sweat, which the Fire has raiſed, fall back, or diſcolour them. When they have lain about nine Hours, they muſt be turned, and in two or three Hours more they may be taken off the Oaſt. It may be known when they are well dried, by the Brittleneſs of the Stalks, and the eaſy falling off of the Hop Leaves.

The *Dutch* and *Flemings* have another Method of drying their Hops : They make a ſquare Kiln, or Room, about eight or ten Feet wide, built of Brick or Stone, having a Door at one Side, and a Fire Place in the Middle of the Room, on the Floor, about thirteen Inches wide within, and thirteen Inches high in Length from the Mouth of it, almoſt to the back Part of the Kiln, a Paſſage being left juſt enough for a Man to go round the End of it ; this they call a Horſe, ſuch as is commonly made in Malt Kilns, the Fire paſſing out at the Holes at each Side; and at the End of it.

The Bed, or Floor, on which the Hops lie to be dried, is placed about five Feet high above; about that is a Wall, near four Feet high, to keep the Hops from falling.

A Window is made at one Side of the upper Bed, to ſhove off the dry Hops down into a Room prepared to receive them. The Beds are made of Laths, or Rails, ſawn very even, lying a Quarter of an Inch diſtant from one another, with a Croſs Beam in the Middle, to ſupport them ; the Laths are let in even with the Top of the Beam, and this keeps them even in the Places; this they call an Oaſt.

The Hops are laid on this Bed by Baſkets full, without any Oaſt Cloth, beginning at one End, and ſo going on till all is covered half a Yard thick, without treading them, then they even them with a Rake, that they may lie of equal Thickneſs.

This being done, they kindle the Fire below, either of Wood or Charcoal, but the latter is accounted the better Fuel for Hops ; this Fire is kept as much as may be at an equal or conſtant Heat, and only at the Mouth of the Furnace, for the Air will ſufficiently diſperſe it.

They do not ſtir them till they are thoroughly dried, *i. e.* till the Top is as fully dried as the Bottom, but if they find any Place not to be ſo dry as the reſt (which may be known by reaching over them with a Stick or Wand, and touching them in ſeveral Places,) they obſerve where they do not rattle, and where they do, and where they do not rattle, they abate them there, and diſpoſe of them where the Places were firſt dry.

They know when they are thoroughly dry, by the Brittleneſs of the inner Stalk, if it be ſhort when it is rubbed, which when they find, they take out the Fire, and ſhove out the Hops at the Window, that is made for that Purpoſe, into the Room made to receive them, with a Coal-Rake made with a Board at the End of a Pole, and then go in at a Door below, and ſweep up the Hops and Seeds that fall through, and put them to the other Hops, then they lay another Bed of green Hops, and renew the Fire, and proceed as before.

This Method is diſapproved by ſome, becauſe (they ſay) the Hops lying ſo thick, and not being turned, the under Part of them muſt needs dry before the upper, and the Fire paſſing through the whole Bed to dry the uppermoſt, muſt neceſſarily over-dry, and much prejudice the greateſt Part of the Hops, both in Strength and Weight, beſides the unneceſſary Expence of Firing, which muſt be long continued to dry thoroughly ſo many together.

Therefore ſome have improved on this Method, and adviſed to make the Kiln much as is before directed as to the *Dutch* Way.

Firſt to make a Bed of flat Ledges about an Inch thick, and two or three Inches broad, ſawn, and laid acroſs one another the flat Way, Chequerwiſe, at about three or four Inches Diſtance one from another, the Edges being ſo entered one into the other, that the Floor may be even and ſmooth; this Bed may be made to reſt on two or three Joiſts, ſet Edgewiſe, to ſupport it from ſinking.

This Bed is to be covered with large double Tin, ſoldered together at each Joint, and the Ledges muſt be ſo ordered, before they are laid, that the Joints of the Tin may always lie over the Middle of the Ledge, the Bed being wholly covered over with Tin: Boards muſt be fitted about the Edges of the Kiln, to keep up the Hops, but one Side muſt be made to remove, that the Hops may be ſhoved off as before.

On this Bed, or Floor of Tin, the Hops may be turned without ſuch Hazard, or Loſs, as upon the Hair Cloth; and alſo it will require a leſs Expence of Fuel, and, beſides, any Sort of Fuel will ſerve in this Kiln, as well as Charcoal, becauſe the Smoke does not paſs through the Hops, as it does the former Ways; but then Care is to be taken, that there be Paſſages made for it at the ſeveral Corners and Sides of the Kiln.

It is found, by Experience, that the turning of Hops, though it be after the moſt eaſy and beſt Manner, is not only an Injury and Waſte to the Hops, but alſo an Expence of Fuel and Time, becauſe they require as much Fuel, and as long a Time, to dry a ſmall Quantity, by turning them, as a large one.

Now this may be prevented, by having a Cover (to be let down and raiſed at Pleaſure) to the upper Bed whereon the Hops lie.

This Cover may alſo be tinned, by nailing ſingle Tin Plates over the Face of it, ſo that when the Hops begin to dry, and are ready to burn, *i. e.* when the greateſt Part of their Moiſture is evaporated, then the cover may be let down within a Foot, or leſs, of the Hops (like a Reverberatory,) and will reflect the Heat upon them, ſo that the Top will ſoon be as dry as the lowermoſt, and every Hop be equally dried.

As ſoon as the Hops are taken off the Kiln, lay them in a Room for three Weeks, or a Month to cool, give, and toughen, for if they are bagged immediately, they will powder, but if they lie awhile (and the longer they lie the better, provided they be covered cloſe with Blankets to ſecure them from the Air,) they may be bagged with more Safety, as not being liable to be broken to Powder in treading, and this will make them bear treading the better, and the harder they are trodden, the better they will keep.

The common Method of bagging is as follows: They have a Hole made in an upper Floor, either round or ſquare, large enough to receive a Hop Bag (which conſiſts of four Ells and a Half of Ell-wide Cloth, and alſo contains ordinarily two Hundred and a Half of Hops,) they tie a Handful of Hops in each lower Corner of the Bag, to ſerve as Handles to it, and they faſten the Mouth of the Hole, ſo placed that the Hop may reſt upon the Edges of the Hole.

Then he that is to tread the Hops down into the Bag, treads the Hops on every Side, another Perſon continually putting them in as he treads them, till the Bag is full, which being well filled and trodden, they unrip the Faſtening of the Bag to the Hops, and let it down, and cloſe up the Mouth of the Bag, tying up a Handful of Hops in each Corner of the Mouth, as was done in the lower Part.

Hops being thus packed, if they have been well dried, and laid up in a dry Place, they will keep good ſeveral Years; but Care muſt be taken, that they be neither deſtroyed nor ſpoiled by the Mice making their Neſts in them.

The Crop of Hops being thus beſtowed, you are to provide for another, firſt by taking Care of the Poles againſt another Year, which are beſt to be laid up in a Shed, having firſt ſtripped off the Haulm from them; but if you have not that Conveniency, ſet up three Poles in the Form of a Triangle, or ſix Poles (as you pleaſe) wide at Bottom, and having ſet them into the Ground, with an Iron Pitcher, and bound them together at Top, ſet the reſt of your Poles about them; and being thus diſpoſed, none but thoſe on the Outſide will be ſubject to the Injuries of the Weather, for all the inner Poles will be kept dry, unleſs at the Top, whereas, if they were on the Ground they would receive more Damage in a Fortnight, than by their ſtanding all the reſt of the Year.

In the Winter Time provide your Soil and Manure for the Hop Ground againſt the following Spring.

If the Dung be rotten, mix it with two or three Parts of common Earth, and let it incorporate together till you have Occaſion to make Uſe of it in making your Hop Hills, but if it be new Dung, then let it be mixed as before, till the Spring come Twelvemonths, for a new Dung is very injurious to Hops.

Dung of all Sorts was formerly more commonly made Uſe of than now it is, eſpecially when rotted, and turned to Mould, and they who have no other Manure muſt uſe it; which, if they do, Cows or Hogs Dung, or human Ordure mixed with Mud, may be a proper Compoſt, becauſe Hops delight moſt in a Manure that is cool and moiſt.

Some recommend Chalk, or Lime, as the beſt Manure, except in cold Lands, and in ſuch, Pigeons Dung will do beſt; a little of which laid to a Hill, and ſo mixed, that it may not be too hot in a Place, is of great Advantage.

LUTEOLA. *See* Reſeda.

LYCHNIDEA. *See* Phlox.

LYCHNIS. *Tourn. Inſt. R. H.* 333. *Tab.* 175. *Lin. Gen. Pl.* 517. Campion.

The *Characters* are,

The Flower has a permanent ſwollen Empalement of 1 *Leaf, indented in* 5 *Parts at the Top. It hath* 5 *Petals, whoſe Tails are the Length of the Empalement, their upper Part plain, broad, and frequently cleft in Laminæ. It hath* 10 *Stamina, longer than the Empalement, alternately ranged, and faſtened to the Tails of the Petals, terminated by proſtrate Summits. In the Center is ſituated an almoſt oval Germen, ſupporting* 5 *Awl-ſhaped Styles, crowned by reflexed hairy Stigmas. The Empalement afterward becomes an oval Capſule with* 1 *Cell, opening with* 5 *Valves, filled with roundiſh Seeds.*

The *Species* are,

1. LYCHNIS *floribus faſciculatis faſtigiatis. Hort. Cliff.* 174. Campion with Flowers gathered into a Pyramid. *Lychnis hirſuta, flore coccineo, major. C. B. P.* 203. Greater hairy Campion with a ſcarlet Flower.

2. LYCHNIS *petalis integris. Lin. Sp. Pl.* 436. Campion with entire Petals. *Lychnis ſylveſtris viſcoſa, rubra, anguſtifolia. C. B. P.* 205. Wild viſcous *Lychnis* with a red Flower and narrow Leaves, commonly called the Single Catchfly.

3. LYCHNIS *floribus diœcis. Hort. Cliff.* 171. Campion with male and female Flowers on different Plants. *Lychnis ſylveſtris, ſive aquatica purpurea, ſimplex. C. B. P.* 204. Wood or aquatick *Lychnis* with a ſingle purple Flower, frequently called Bachelors Button.

4. LYCHNIS *floribus diœcis, calycibus inflatis hirſutis.* Campion with male and female Flowers, growing on different Plants, and ſwollen hairy Empalements. *Lychnis ſylveſtris, alba, ſimplex. C. B. P.* 204. Wild Campion with a ſingle white Flower.

5. LYCHNIS *petalis quadrifidis, fructu ſubrotundo. Hort. Cliff.* 174. Campion with quadrifid Petals, and a roundiſh Fruit. *Lychnis pratenſis flore laciniato ſimplici. Mor. Hiſt.* 2. p. 537. Meadow Campion with a ſingle jagged Flower, commonly called Ragged Robin.

6. LYCHNIS *petalis bifidis corymboſis. Lin. Sp. Plant.* 436. Campion with bifid Petals, and Flowers growing in a Corymbus. *Silene floribus in capitulum congeſtis. Haller. Helv.* 376. *Lychnis* with Flowers collected in a Head.

7. LYCHNIS *petalis bifidis, caule dichotomo, foliis ſubhirtis. Lin. Sp. Plant.* 437. Campion with bifid Petals, a Stalk divided by Pairs, and Leaves which are ſomewhat hairy.

8. LYCHNIS *caule erecto, calycibus ſtriatis acutis, petalis diſſectis. Plat.* 170. Campion with an erect Stalk, ſtriped acute Empalements, and Petals cut into many Parts.

9. LYCHNIS *calyce inflato, corollâ calyce breviore, caule ſubunifloro. Lin. Sp. Pl.* 437. Campion with a ſwollen Empalement, the Petals of the Flower ſhorter than the Cup, and Stalks having chiefly one Flower. *Lychnis ſylveſtris alba, calyce amplo veſicario. Vaill.* Wild white Campion with a large inflated Empalement.

The 1ſt Sort here mentioned, is commonly known by the Title of ſcarlet *Lychnis*. Of which there is one with double Flowers, which is moſt eſteemed for the Size of the Flowers and Multiplicity of the Petals; as alſo for the Duration of the Flowers, which continue much longer in Beauty than the ſingle Flowers, ſo that the latter is not much cultivated at preſent, though the Flowers of this are very beautiful; and as the Plants are ſo eaſily propagated by Seed, they may ſoon be had in greater Plenty than thoſe with double Flowers, which do not produce Seeds. Of the ſingle Sort there are three Varieties, the deep Scarlet, the Fleſh Colour, and the White, but the firſt is the moſt beautiful.

This is eaſily propagated by Seeds which ſhould be ſown on a Border expoſed to the Eaſt, in the Middle of *March*. The Plants will appear in *April*, when if the Seaſon is dry, they ſhould be refreſhed with Water two or three Times a Week. By the Beginning of *June* the Plants will be fit to remove, when there ſhould be a Bed of common Earth prepared to receive them; into which they ſhould be planted at about 4 Inches apart, obſerving to water and ſhade them till they have taken Root; after which Time they will require no other Care but to keep them clean from Weeds till the following Autumn, when they ſhould be tranſplanted into the Borders of the Pleaſure Garden, where they are to continue. The Summer following theſe Plants will flower and produce ripe Seed, but the Roots will abide ſeveral Years and continue to flower. This Sort flowers in *June* and *July*, and the Seeds ripen in Autumn. It may alſo be propagated by Offsets, but as the Seeds ripen ſo freely, few Perſons trouble themſelves to propagate the Plants any other Way. The *French* call this Plant *Jeruſalem Croſs*.

The Sort with double Flowers is a valuable Plant, the Flowers are very double and of a beautiful Scarlet Colour. This hath a perennial Root from which ariſe 2, 3, or 4 Stalks, according to the Strength of the Roots; theſe in rich moiſt Land, grow upwards of 4 Feet high, the Stalks are ſtrong, erect, and hairy. They are garniſhed the whole Length with Spear-ſhaped Leaves ſitting cloſe to the Stalks; theſe are placed by Pairs oppoſite, and juſt above each Pair of Leaves there are 4 ſmaller Leaves ſtanding round the Stalk: The Flowers are produced in cloſe Cluſters ſitting on the Top of the Stalk; when the Roots are ſtrong, the Cluſters of Flowers will be very large, ſo they make a fine Appearance, the Flowers being very double and of a bright Scarlet Colour. They appear the latter End of *June*, and in moderate Seaſons continue near a Month in Beauty. The Stalks decay in Autumn, and new ones ariſe in the Spring. This was originally produced from the Seeds of the ſingle Sort, and is propagated by Slips taken from the Roots in Autumn; but as this is a ſlow Method of increaſing the Plants, ſo the beſt Way to have them in Plenty, is to cut off the Stalks in *June*, before the Flowers appear, and theſe may be cut into ſmall Lengths, each of which ſhould have three Joints; theſe Cuttings ſhould be planted on an Eaſt Border of Soft loamy Earth, putting two of the Joints into the Ground, leaving one Eye juſt level with the Surface; theſe muſt be watered, and then covered cloſe with Bell or Hand Glaſſes, ſo as to exclude the outward Air, and ſhaded with Mats when the Sun ſhines hot upon them. The Cuttings ſo managed will put out Roots in 5 or 6 Weeks, when they muſt be expoſed to the open Air, and in very dry Weather they ſhould be now and then refreſhed with Water, but it muſt not be repeated too often, nor given in large Quantities, for too much Moiſture will cauſe them to rot. Theſe will make good Plants by the Autumn, when they may be tranſplanted into the Borders of the Pleaſure Garden, where they will flower the following Summer.

Some People who are covetous to have their Plants flower, ſuffer the Stalks to remain till the Flowers are decayed, and then cut them off to plant, but by that Time the Stalks are grown hard, ſo but few of them ſucceed, and thoſe which do, will not be near ſo good Plants as thoſe which are planted earlier, therefore it will be better to ſacrifice the Flowers of ſome Roots for this Purpoſe. Theſe Plants delight in a ſoft rich loamy Soil not too moiſt or ſtiff, in which they will thrive and flower very ſtrong, but they do not care for much Dung, which very often cauſes the Roots to canker and rot, ſo that in the rich dunged Lands about *London* they do not thrive well. As theſe Plants grow tall, they ſhould be planted in the Middle of large Borders, and not crowded with other Plants, for their Roots extend to a large Diſtance, ſo if they are incommoded by other Roots, it will ſtint the Growth of the Plants.

I have not ſeen any double Flowers of the two other Varieties, but have been informed that there are of both the White and the Fleſh Colour with double Flowers in ſome of the *French* Gardens. Theſe make a Variety, but are not ſo beautiful as the Scarlet, ſo are not much eſteemed.

The 2d Sort is commonly called Red *German* Catchfly. This hath been found growing naturally upon the Rocks in *Edinburgh* Park, and in ſome Places in *Wales*. It was formerly cultivated in Flower Gardens for Ornament, but ſince this Sort with double Flowers hath been produced, the ſingle has been almoſt baniſhed out of the Gardens. This hath long narrow Graſs-like Leaves, which come out from the Root without Order, ſitting cloſe to the Ground; between theſe come up ſtrait ſingle Stalks; which in good Ground riſe a Foot and Half high, at each Joint of the Stalk come out two Leaves oppoſite, of the ſame Form as the lower, but decreaſe in their Size upward; under each Pair of Leaves, for an Inch in Length, there ſweats out of the Stalk, a glutinous Liquor, which is almoſt as clammy as Birdlime, ſo that the Flies which happen to light upon theſe Places, are faſtened to the Stalk where they die, from whence it had the Title of Catchfly. The Stalk is terminated by a Cluſter of purple Flowers, and from the two upper Joints, come out on each Side the Stalk, a Cluſter of the ſame Flowers, ſo that the whole form a Sort of looſe Spike. Theſe appear in the Beginning of *May*, and are ſucceeded by roundiſh Seed Veſſels, which are full of ſmall angular Seeds ripening in *July*.

It may be propagated in Plenty by parting the Roots in Autumn, at which Time every Slip will grow, or if the Seeds are ſown as is directed for the firſt Sort, the Plants may be raiſed in Plenty. This delights in a light moiſt Soil and a ſhady Situation.

The double flowering of this Sort was accidentally obtained from the Seeds of the ſingle. This has not been known 40 Years in the *Engliſh* Gardens, but it is now ſo common as to have excluded that with ſingle Flowers; it differs only from that in the double Flowers. As this never produces Seeds, ſo it can only be propagated by parting and ſlipping the Roots; the beſt Time for this is in Autumn, at which Time every Slip will grow. If this is performed in *September*, the Slips will have taken good Root before the Froſt, and will flower well the following Summer; but if they are expected to flower ſtrong, the Roots muſt not be divided into ſmall Slips, though for multiplying the Plants it matters not how ſmall the Slips are. Theſe ſhould be planted on a Border expoſed to the Morning Sun, and ſhaded when the Sun is warm, till they have taken Root. If the Slips are planted in the Beginning of *September*, they will be rooted ſtrong enough to plant in the Borders of the Flower Garden, by the Middle or latter End of *October*. The Roots of this Sort multiply ſo faſt as to make it neceſſary to tranſplant and part them every Year, for when they are let remain longer, they are very apt to rot. This Sort requires the ſame Soil and Situation as the former.

The 3d Sort grows naturally by the Side of Ditches and in moiſt Paſtures in many Parts of *England*, ſo is ſeldom admitted into Gardens; it hath a perennial Root, from which ariſe many branching diffuſed Stalks, from 2 to 3 Feet high, garniſhed with oval acute-pointed Leaves placed by Pairs at each Joint, and terminated by Cluſters of purple Flowers, which appear in *April* and *May*. The male Flowers grow on ſeparate Plants from the female. The latter produces Seeds which ripen in *July*; the Stalks decay in Autumn, but the Roots continue ſeveral Years.

There is a Variety of this with double Flowers, which is cultivated in Gardens, by the Title of Red Bachelors Button. This is an ornamental Plant, and continues long in flower. It is propagated by Slips which ſhould be planted the Beginning of *Auguſt* in a ſhady Border of loamy Earth, where they will take Root in about 6 Weeks or two Months, and may then be tranſplanted into the Borders of the Flower Garden. Theſe Roots ſhould be annually tranſplanted, otherwiſe they frequently rot; and young Plants muſt be propagated by Slips to ſupply the Decay of the old Roots, which are not of very long Duration. This Sort thrives beſt in a ſoft loamy Soil, and in a ſhady Situation, where they have only the Morning Sun.

The 4th Sort is very common on dry Banks on the Side of Roads, in moſt Parts of *England*, ſo is not admitted into Gardens; there is a Variety of this with purple Fowlers, which I find is by ſome ſuppoſed to be the ſame as the third, but is very different, for the Stalks of this are branched out much more; the Leaves are longer and more veined, and the Flowers of this ſtand ſingly on pretty long Foot Stalks, ſo are not produced in Cluſters like thoſe of the third. This is alſo very hairy, and the Empalement of the Flowers is ſwollen like inflated Bladders. This flowers near a Month after the other, but the male and female Flowers grow on different Plants, as in the former.

There is a variety of this with double Flowers, which is propagated in Gardens by the Title of Double white

Bachelors

Batchelors Button, and is an ornamental Plant in the Flower Garden, tho' being white it doth not make ſo good an Appearance as the other; however it adds to the Variety. This is propagated as the double Sort before-mentioned, but the Plants will thrive in a drier Soil, and a more open Expoſure than that.

The 5th Sort grows very common in moiſt Meadows, and by the Side of Rivers in moſt Parts of *England*, where it is intermixed with the Graſs. This riſes with upright unbranched Stalks, near a Foot and a Half high, garniſhed with narrow Spear-ſhaped Leaves placed by Pairs oppoſite at each Joint. The Stalks are ſlender, channelled, and terminated by 6 or 7 purple Flowers on pretty long Foot Stalks which branch out. The Empalements of the Flower are ſtriped with purple, and the Petals of the Flowers are deeply jagged in 4 narrow Segments, which appear as if torn; from whence the Country People have given it the Appellation of Ragged Robbin. It flowers in *May*, and the Seeds ripen in *July*. This Sort is never kept in Gardens, but there is a Variety of it with very double Flowers, which is propagated by the Gardeners for Ornament. It only differs from the ſingle in the Multiplicity of the Petals, and produces no Seeds, ſo is propagated by Slips as the ſecond Sort. It is commonly known by the Title of Double Ragged Robbin.

The 6th Sort grows naturally on the *Alps*, in *Lapland*, and the other cold Parts of *Europe*. This is a perennial Plant which delights in a moiſt Soil. The Stalks of this are erect half a Foot high, garniſhed with narrow Spear-ſhaped Leaves placed by Pairs oppoſite, like the former Sort, but are a little ſhorter and broader; the Bottom Leaves are broader than thoſe upon the Stalks, and ſit cloſe to the Ground; they are ſmooth, and of a deep Green: The Flowers are produced in a Corymbus on the Top of the Stalk ſitting cloſe together; they are of a purple Colour, and the Petals are cut in the Middle. This flowers the Beginning of *June*, and the Seeds ripen in *Auguſt*. It is propagated by Seeds, and alſo by parting the Roots; it muſt have a moiſt Soil and a ſhady Situation, otherwiſe the Plants will not thrive. The Time for tranſplanting the Plants, and parting the Roots, is the ſame as for the ſecond Sort, and the Seeds may be ſown on a ſhady Border in *March*. In dry Weather the Ground muſt be kept moiſt, otherwiſe the Seeds will not grow. When the Plants come up and are fit to remove, they ſhould be tranſplanted into a ſhady Border where they may remain to flower.

The ſeventh Sort grows naturally in *Siberia*; this hath a perennial Root, from which ariſe many narrow Leaves ſitting cloſe to the Ground. The Stalks riſe a Foot high, dividing into Branches by Pairs. The Flowers grow out from the Diviſion of the Branches, as alſo, at the Top of the Stalks. They are compoſed of five white Petals, which are divided in the Middle; theſe appear in *June*, and are ſucceeded by roundiſh Capſules filled with ſmall angular Seeds, which ripen in *Auguſt*. This requires the ſame Treatment as the former Sort.

The 8th Sort was brought from *Portugal* to *England*, and is probably a Variety of one with ſingle Flowers, which grows naturally in that Country; but is different from any we have in *England*. This approaches neareſt to the Double Ragged Robbin, but is different from that. It hath a perennial Root, from which ariſe many oblong narrow Leaves ſitting cloſe to the Ground. It divides into ſeparate Heads like the ſecond Sort, and from each of theſe come out an upright Stalk about 9 Inches high, which divides upwards by Pairs, and from the Middle of each Diviſion, comes out a ſlender Foot Stalk 2 Inches long, ſuſtaining 1 double Purple Flower at the Top, whoſe Petals are very much jagged at their Points; the Empalements of the Flowers are marked with deep purple Stripes. From the Side of the Stalks there are alſo Foot Stalks come out at the Wings, which for the moſt Part ſuſtain but one Flower, though ſometimes they have two; theſe Flowers being very double, are never ſucceeded by Seeds. The uſual Time of this Plant flowering is in *June*, but ſometimes it ſends out freſh Stalks, which have Flowers in the Autumn. It is propagated by Slips as the third and fourth Sorts, but coming from a warm Country, it is impatient of much Cold, and requires a particular Treatment, for it does not thrive well in Pots, nor will it live through the Winter in open Borders, ſo that the only Situation in which I have ſeen it thrive, was where it was planted as cloſe as poſſible to a South Wall in dry undunged Earth; for in rich or moiſt Ground the Roots preſently rot, as they alſo do when they are watered. If they are planted in Brick Rubbiſh, they will ſtill do better. I was favoured with this Plant by *John Browning*, Eſq; of *Lincoln's-Inn*, who received it from *Portugal*.

The 9th Sort grows naturally in the northern Parts of *Europe*. It is like the 4th Sort, but the Petals of the Flowers do not extend beyond the Empalement, and the Empalements are much larger and more ſwollen.

The other *Species* of *Lychnis* are now ranged under the following Genera, *viz.*

Agroſtemma, *Cucubalus*, *Saponaria*, and *Silene*, to which Articles the Reader is deſired to turn for thoſe which are not here enumerated.

LYCIUM. *Lin. Gen. Pl.* 232. *Jaſminoides. Niſſol. Act. R. Par.* 1711. *Rhamnus. C. B. P.* 477. Boxthorn.

The *Characters* are,

The Flowers hath a ſmall obtuſe permanent Empalement, which is erect and divided into 5 *Parts at the Top; the Flower is Funnel-ſhaped, of* 1 *Petal, with an incurved Tube, whoſe Brim is cut into* 5 *obtuſe Segments, which ſpread open. It has* 5 *Awl-ſhaped Styles, a little inclined and ſhorter than the Tube, terminated by erect Summits. In the Center is ſituated a roundiſh Germen ſupporting a ſingle Style, longer than the Stamina, crowned by a thick bifid Stigma; the Germen becomes a roundiſh Berry with* 2 *Cells, incloſing Kidney-ſhaped Seeds faſtened to the middle Partition.*

The *Species* are,

1. Lycium *foliis lineari-longioribus, tubo florum longiori, ſegmentis obtuſis.* Boxthorn with longer liniar Leaves, a longer Tube to the Flower, and obtuſe Segments. *Lycium foliis linearibus. Hort. Cliff.* 57. Boxthorn with linear Leaves.

2. Lycium *foliis lineari-brevioribus, tubo florum breviori, ſegmentis ovalibus patentiſſimis.* Boxthorn with ſhorter linear Leaves, a ſhorter Tube to the Flower, and oval Segments ſpreading open.

3. Lycium *foliis cuneiformibus. Vir. Cliff.* 14. Boxthorn

thorn with Wedge-ſhaped Leaves. *Jaſminoides aculeatum, ſalicis folio, flore parvo ex albo purpuraſcente. Michel. Gen.* 224. Prickly Baſtard Jaſmine with a Willow Leaf and a ſmall purpliſh white Flower.

4. Lycium *foliis lanceolatis craſſiuſculis, calycibus trifidis. Lin. Sp. Pl.* 192. Boxthorn with Spear-ſhaped thick Leaves, and trifid Empalements. *Jaſminoides aculeatum, polygoni folio, floribus parvis albidis. Shaw. Afr.* 349. *f.* 349. Prickly Baſtard Jaſmine, with a Knot Graſs Leaf, and ſmall whitiſh Flowers.

5. Lycium *foliis ovato-lanceolatis, ramis diffuſis, floribus ſolitariis patentibus alaribus, ſtylo longiori.* Boxthorn with oval Spear-ſhaped Leaves, diffuſed Branches, and ſingle ſpreading Flowers proceeding from the Sides of the Branches with a longer Style.

6. Lycium *foliis lanceolatis acutis.* Boxthorn with Spear-ſhaped acute Leaves. *Jaſminoides Sinenſe Halimi folio longiore & anguſtiore. Du Ham.* 306. China Baſtard Jaſmine with a narrow and longer Leaf.

7. Lycium *foliis oblongo-ovatis, craſſiuſculis, confertis, ſpinis robuſtioribus.* Boxthorn with oblong, oval, thick Leaves growing in Cluſters, and ſtronger Spines.

8. Lycium *foliis lineari-lanceolatis confertis, calycibus brevibus acutis.* Boxthorn with linear Spear-ſhaped Leaves growing in Cluſters, and ſhort acute Empalements.

9. Lycium *inermis, foliis lanceolatis, alternis, perennantibus.* Smooth Boxthorn with Spear ſhaped ever-green Leaves placed alternate.

10. Lycium *foliis cordato ovatis, ſeſſilibus, oppoſitis perennantibus, ſpinis craſſis bigeminis, floribus confertis. Lycium* with oval Heart-ſhaped Leaves placed oppoſite, which are ever-green, and ſit cloſe to the Stalks, with thick double Spines, and Flowers growing in Cluſters. *Arbor Africana ſpinoſa, foliis craſſis cordatis & conjugatis, ſpinis craſſis bigeminis. Herm. Cat.* 4. Prickly *African* Tree with thick, Heart-ſhaped Leaves growing by Pairs, and thick double Spines.

The 1ſt Sort grows naturally in *Spain, Portugal,* and at the *Cape of Good Hope.* This riſes with irregular ſhrubby Stalks 10 or 12 Feet high, ſending out ſeveral crooked knotty Branches, covered with a whitiſh Bark, and armed with long ſharp Spines, on which grow many Cluſters of narrow Leaves; theſe Thorns often put out one or two ſmaller on their Sides, which have ſome Cluſters of ſmaller Leaves upon them; the Branches are garniſhed with very narrow Leaves an Inch and a Half long, and at the Baſe of theſe come out Cluſters of ſhorter and narrower Leaves. The Flowers come out from the Side of the Branches, ſtanding on ſhort Foot Stalks; they have a ſhort permanent Empalement of 1 Leaf, which is tubulous, and cut into 5 Segments at the Brim; the Flower is Funnel-ſhaped, of one Petal, with a long incurved Tube, cut into 5 obtuſe Segments at the Brim; they are of a dull purple Colour, and have 5 Stamina almoſt as long as the Tube, with erect Summits. In the Center is ſituated a roundiſh Germen, ſupporting a Style longer than the Stamina, crowned by a bifid Stigma. The Germen afterward turns to a roundiſh fleſhy Berry, of a yellowiſh Colour when ripe, incloſing ſeveral hard Seeds. This uſually flowers in *June* and *July,* and the Seeds ripen in the Autumn, but there is frequently a few Flowers come out in all the Summer Months.

It may be propagated either by Seeds, Cuttings, or Layers. If by Seeds, they ſhould be ſown in Autumn ſoon after they are ripe, for if they are kept out of the Ground till Spring, they ſeldom come up the firſt Year. If the Seeds are ſown in Pots, the Pots ſhould be plunged into ſome old Tan in Winter, and in very ſevere Froſt covered with Peas Haulm or Straw, but in mild Weather ſhould be open to receive the Wet; in Spring the Pots ſhould be plunged into a moderate hot Bed, which will ſoon bring up the Plants; theſe muſt be inured to bear the open Air as ſoon as the Danger of Froſt is over, and when they are 3 Inches high, they may be ſhaken out of the Pots, and each planted in a ſmall ſeparate Pot, filled with loamy Earth, and placed in the Shade till they have taken new Root, when they may be removed to a ſheltered Situation, where they may remain till Autumn; then they ſhould be either removed into the Green-houſe, or placed under a hot Bed Frame to ſhelter them from hard Froſt; for theſe Plants are too tender to live in the open Air in *England,* ſo they muſt be kept in Pots, and treated as Myrtles, and other hardy Green-houſe Plants; but when the Plants are grown ſtrong, there may be a few of them planted in the full Ground in a warm Situation, where they will live in moderate Winters, but in hard Froſts they are commonly deſtroyed. If the Cuttings of theſe Plants are planted in a ſhady Border in *July,* and duly watered, they will take Root, and may then be treated as the ſeedling Plants.

The 2d Sort was raiſed in the *Chelſea* Garden from Seeds, which came from the *Cape of Good Hope.* This hath an irregular ſhrubby Stalk like the former, but they ſeldom riſe more than 4 or 5 Feet high; the large Leaves are ſhorter and a little broader than thoſe of the firſt, but the Tufts of ſmall Leaves are narrower; the Tube of the Flower is ſhorter; the Brim is deeper cut into oval Segments which ſpread open; the Empalement is ſhorter and cut into acute Segments; the Flowers and Fruit are alſo ſmaller. Theſe Differences are permanent, in all the Plants which I have two or three Times raiſed from Seeds. It flowers about the ſame Time as the firſt, and may be propagated in the ſame Way, the Plants alſo require the ſame Culture.

The 3d Sort grows naturally in the Hedges in the South of *France,* in *Spain,* and *Italy.* This hath many irregular ſhrubby Stalks, which riſe 8 or 9 Feet high, ſending out ſeveral irregular Branches, covered with white Bark, and armed with pretty ſtrong Thorns; the Leaves are narrow at Bottom, growing broader upward, and are of a pale green Colour. The Flowers come out from the Side of the Branches, they are of a purpliſh white Colour and ſmall, ſo make no great Appearance. This Sort flowers in *June* and *July,* but rarely produces any Seeds in this Country. The Leaves of this remain till Winter, when they fall off.

It may be propagated by Cuttings or Layers, as the firſt Sort. The Plants will live abroad in a ſheltered warm Situation, but in very hard Froſt they ſhould be covered with Straw or Litter, otherwiſe the Branches will be killed, and ſometimes the Roots are deſtroyed where they have not ſome Cover.

The 4th Sort was brought from *Africa* by the late Dr. *Shaw*, where it grows naturally. This hath a ſhrubby Stalk which riſes 7 or 8 Feet high, ſending out ſeveral irregular Branches, armed with ſtrong Spines, and garniſhed with ſhort, thick, Spear-ſhaped oval Leaves, which ſtand without Order. The Flowers come out from the Side of the Branches, they are ſmall and white, ſo make little Appearance. This Flowers in *July* and *Auguſt*, but does not produce Seeds in *England*. It may be propagated by Cuttings as the firſt Sort, but is too tender to live in the open Air in Winter in this Country, ſo the Plants muſt be kept in Pots, and removed into the Green-houſe in Autumn, and treated as other hardy Kinds of Green-houſe Plants.

The 5th Sort grows naturally in *China*, from whence the Seeds were brought to *England* a few Years paſt, and the Plants were raiſed in ſeveral Gardens, and by ſome were thought to be the *Thea*. This riſes with weak, irregular, diffuſed Branches to a great Height, but require Support, otherwiſe they will trail on the Ground: I have meaſured ſome of theſe Branches, which in one Year have been upward of 12 Feet long; the lower Leaves are more than 4 Inches long, and 3 broad in the Middle; they are of a light green, and a thin Conſiſtence, placed without Order on every Side the Branches; as the Shoots advance in Length, ſo the Size of the Leaves diminiſh, and toward the upper Part they are not more than an Inch long, and a Quarter of an Inch broad, they ſit cloſe to the Stalks on every Side. The Flowers come out ſingly at every Joint toward the upper Part of the Branches, ſtanding on ſhort ſlender Foot Stalks; they are of a dull purple Colour with ſhort Tubes; the Brims are ſpread open broader than either of the former Sorts, and the Style is conſiderably longer than the Tube of the Flower. This Sort flowers in *Auguſt*, *September*, and *October*; the Plant is very hardy, and retains its Leaves till *November* before they decay. It propagates faſt enough by its creeping Roots, which ſend out Suckers at a great Diſtance, and the Cuttings thruſt into the Ground will take Root as freely as Willows.

The 6th Sort grows naturally in *China*, from whence the Seeds were brought to the Royal Garden at *Paris*, and the Seeds were ſent me by Dr. *Bernard de Juſſieu*, Demonſtrator of the Plants in that Garden. This riſes with a ſhrubby Stalk to a conſiderable Height, ſending out many irregular Branches covered with a very white Bark, and armed with a few ſhort Spines; the Leaves are about 3 Inches long, and one broad in the Middle; they are placed alternately on the Branches, and are of a whitiſh green. The Flowers of this Sort appear in *June* and *July*, which are ſucceeded by ſmall round Berries that ripen in Autumn, when they are as red as Coral. This Sort is propagated by Cuttings, which ſhould be planted in Spring before they begin to ſhoot, in a Border expoſed to the Morning Sun, where they will take Root very freely; but theſe ſhould not be removed till the Autumn, when they may be planted to cover high Walls, for the Branches are too weak to ſupport themſelves; and as the Leaves continue green as long as any of the deciduous Plants, they are proper Plants for ſuch Purpoſes, for they may be trained to a great Height.

The 7th Sort was raiſed in the *Chelſea* Garden from Seeds, which were brought me from the *Cape of Good Hope*. This riſes with ſhrubby branching Stalks 7 or 8 Feet high, armed with long ſtrong Thorns, that have ſeveral Cluſters of Leaves upon them; the Branches are garniſhed with ſmall oblong oval Leaves, placed without Order; ſometimes they come out in ſmall Cluſters from one Point, at others they are ſingle, ſtanding on every Side the Stalk; theſe are of a light green, and a pretty thick Conſiſtence, continuing green all the Year. Theſe Plants have not as yet flowered here, ſo I can give no Account of them, but by the Fruit which I received entire, I make no doubt of its belonging to this Genus.

This Sort is pretty hardy, for it has lived abroad two Winters, where it was planted againſt a South Eaſt Wall. It may be propagated either by Layers or Cuttings as the firſt; and when the Plants have obtained Strength, they may be planted in a warm Situation, where they will live with very little Shelter in ſevere Froſt. The Branches of this Sort are ſtronger than thoſe of the former, ſo will not require the ſame Support. It will be proper to keep a Plant of this in Shelter to preſerve the Kind, leſt thoſe in the open Air ſhould be deſtroyed.

The 8th Sort has much the Appearance of the firſt, but the Branches are not ſo ſtrongly armed with Thorns; they have alſo a whiter Bark, the Leaves are broader and of a lighter green, ſtanding in Cluſters at every Joint. The Flowers are ſmaller, of a deeper purple Colour, and have much ſhorter Empalements, which are cut into acute Segments. It flowers at the ſame Time with the firſt Sort, but does not produce any Seeds in this Country. This was raiſed in the *Chelſea* Garden, from Seeds which were ſent me from the *Cape of Good Hope*; it is not ſo hardy as the former Sort, ſo requires Protection from very hard Froſt; therefore the Plants ſhould be kept in Pots and houſed in the Winter, treating them as other hardy Green-houſe Plants. It may be propagated by Cuttings or Layers, as the firſt Sort.

The 9th Sort has been long an Inhabitant of the *Chelſea* Garden; it was raiſed from Seeds which came from *China*, and was for many Years taken for the Tea Tree, till it produced ſome Flowers, which diſcovered its true Genus. This riſes with a ſtrong woody Stalk 6 or 7 Feet high, ſending out many Branches covered with a brown Bark and ſmooth, having no Thorns; they are garniſhed with Spear-ſhaped Leaves about 3 Inches long, and near three Quarters of an Inch broad, placed alternately on the Branches, ſtanding on ſhort Foot Stalks; they are of a deep green, and continue all the Year. The Flowers are white, and of the ſame Shape with the others of this Genus, but there has not been any Seeds as yet produced in *England*.

This Plant will live in the open Air, if planted in a warm Situation and a dry Soil; but it is of ſlow Growth, ſeldom ſhooting more than 3 or 4 Inches in a Seaſon; it is alſo difficult to propagate, for the Branches which are laid down, will not take Root in leſs than 2 Years, and the Cuttings are with Difficulty made to grow. The beſt Time to plant them is in *May*, in Pots filled with light loamy Earth, plunging them into an old Bed of Tanners Bark, covering the Pots cloſe with

Bell or Hand Glaſſes to exclude the external Air; theſe ſhould be ſhaded every Day from the Sun; theſe Cuttings ſhould be refreſhed with Water once a Week, but it muſt not be given to them in too great Plenty. Thoſe Cuttings which ſucceed, will have put out Roots by the Beginning of *Auguſt*, when they may be taken up and planted in ſmall Pots, placing them in the Shade till they have taken new Root, and then they may be placed with other hardy exotick Plants in a ſheltered Situation, till the End of *October*, when they may be put under a common Frame to ſhelter them in Winter. When the Plants have acquired Strength, they may be ſhaken out of the Pots, and planted in the full Ground in a warm Situation, where, if they are ſheltered in ſevere Froſts, they will thrive better than in Pots.

The 10th Sort grows naturally at the *Cape of Good Hope*, from whence the Seeds were ſent to *Holland* a few Years paſt, where the Plants were raiſed. This is a low ſhrubby Plant, which ſends out Branches from the Ground upward, covered with a dark green Bark, and armed with ſhort ſtrong Thorns, which come out by Pairs, and ſometimes there are double Pairs on the ſame Foot Stalk; theſe are ſituated juſt below the Leaves, and where there are 4, 2 of them point upward, and the other 2 downward. The Leaves are Heart-ſhaped, not much larger than thoſe of the Box Tree, of the ſame Conſiſtence and Colour, terminating in acute Points; they are placed by Pairs oppoſite, on very ſhort Foot Stalks, ſtanding pretty cloſe together; theſe continue green all the Year. The Flowers come out from the Side of the Branches, on ſhort ſlender Foot Stalks, each ſupporting 5 or 6 ſmall white Flowers, which grow in a Cluſter at the Top; theſe have very ſhort Empalements, and pretty long Tubes, divided at the Brim into 5 acute Segments. Theſe Flowers have an agreeable Odour, they appear in *July* and *Auguſt*, but are not ſucceeded by Seeds in *England*.

This Sort may be propagated by Cuttings, as the firſt Sort, which, if planted in *July* and ſhaded from the Sun, will take Root very freely; then they ſhould be planted into ſeparate ſmall Pots, and placed in the Shade till they have taken new Root, after which they may be treated as the former Sort. This plant has not as yet been planted in the full Ground in *England*, but it lives through the Winter under a common Frame.

The other Species which were included in this Genus, are now removed to *Celaſtrus*.

LYCOPERSICON. *Tourn. Inſt. R.H.* 150. *Tab.* 63. *Solanum. Lin. Gen. Pl.* 224. Love Apples, or Wolf's Peach.

The *Characters* are,

The Flower has a permanent Empalement of 1 *Leaf, cut into* 5 *acute Segments at the Top, and permanent. The Flower has* 1 *Petal which is Wheel-ſhaped, with a very ſhort Tube, and a large* 5 *cornered Brim, which ſpreads open and is plaited: It hath* 5 *ſmall Awl-ſhaped Stamina, terminated by oblong Summits which cloſe together. It hath a roundiſh Germen, ſupporting a ſlender Style the Length of the Stamina, crowned by an obtuſe Stigma. The Germen becomes a roundiſh fleſhy Fruit or Berry, divided into ſeveral Cells, incloſing many flat Seeds.*

The *Species* are,

1. LYCOPERSICON *caule inermi herbaceo, foliis pinnatis inciſis, fructu rotundo glabro.* Love Apple with an herbaceous unarmed Stalk, pinnated cut Leaves, and a ſmooth round Fruit. *Lycoperſicon Galeni. Ang.* 217. The Wolf Peach of *Galen*.

2. LYCOPERSICON *caule herbaceo, hirſutiſſimo, foliis pinnatis, inciſis, fructu compreſſo ſulcato.* Love Apple with a very hairy herbaceous Stalk, winged cut Leaves, and a compreſſed furrowed Fruit. *Solanum pomiferum, fructu rotundo ſtriato molli. C. B. P.* 167. Apple-bearing Nightſhade, with a ſoft, round, ſtriated Fruit, commonly called Tomatas by the *Spaniards*.

3. LYCOPERSICON *caule inermi, herbaceo, erecto, foliis ovatis dentato angulatis, ſubſpinoſis, fructu ſubrotundo ſulcato.* Love Apple with an herbaceous, erect, unarmed Stalk, oval Leaves indented, angular, and having a few Spines, with a roundiſh furrowed Fruit. *Lycoperſicon fructu ſtriato duro. Tourn. Inſt. R. H.* 150. Wolf's Peach with a hard ſtriated Fruit.

4. LYCOPERSICON *caule inermi herbaceo, foliis inæqualiter pinnatis, foliolis obtuſe-dentatis, racemis reflexis.* Love Apple with an herbaceous, unarmed Stalk, Leaves unequally winged, whoſe Lobes are bluntly indented, and reflected Branches. *Lycoperſicon inodorum. Juſſ.* Wolf's Peach having no Scent.

5. LYCOPERSICON *caule inermi herbaceo, foliis pinnatis, inciſis, undatis, ſtylo longiore perſiſtente.* Love Apple with an unarmed, herbaceous Stalk, winged cut Leaves which are waved, and a longer permanent Style to the Flower. *Lycoperſicon pimpinellæ ſanguiſorbæ foliis. Feuill. Obſ.* 3. p. 37. Wolf's Peach with Leaves like Burnet.

6. LYCOPERSICON *caule herbaceo, procumbente, foliis pinnatifidis, glabris, floribus ſolitariis alaribus.* Love Apple with an herbaceous trailing Stalk, Wing-pointed ſmooth Leaves, and Flowers growing ſingly from the Wings of the Stalk.

7. LYCOPERSICON *caule inermi herbaceo, foliis pinnatis integerrimis.* Love Apple with an unarmed herbaceous Stalk, and winged Leaves which are entire. *Solanum tuberoſum eſculentum. C. B. P.* 167. Eſculent tuberous Nightſhade, commonly called Potatoe, by the *Indians Batatas*.

The 1ſt Sort here mentioned, is ſuppoſed to be the *Lycoperſicon* of *Galen*. This is an annual Plant, with an herbaceous, branching, hairy Stalk, which will riſe to the Height of 5 or 6 Feet if ſupported, otherwiſe the Branches will fall to the Ground; theſe are garniſhed with winged Leaves of a very rank diſagreeable Odour, compoſed of 4 or 5 Pair of Lobes terminated by an odd one; theſe are cut on their Edges, and end in acute Points. The Flowers come out from the Side of the Branches, on pretty long Foot Stalks, each ſuſtaining ſeveral yellow Flowers, ranged in a ſingle long Bunch; theſe are ſucceeded by round, ſmooth, pulpy Fruit, about the Size of a large Cherry. There are two Varieties of this, one with yellow, and the other with red Fruit. Theſe Plants flower from *June* till the Froſt ſtops them, and the Fruit ripens in Succeſſion from the End of *July*, till the Froſt kills the Plants; this Sort is uſed in Medicine.

The 2d Sort is very like the firſt, excepting the Fruit, which differs greatly; for thoſe of the ſecond Sort are very large, compreſſed at both Ends, and deeply furrowed all over the Sides. This Sort never varies to the other, ſo that it is undoubtedly a diſtinct Species. This is the Sort which is commonly cultivated to put into Soups, and the *Portugueze* and *Spaniards* uſe them in many of their Sauces.

The 3d Sort is alſo annual; this riſes with an erect herbaceous Stalk a Foot and a Half high, dividing into ſeveral Branches, which are garniſhed with oval angular Leaves, from 3 to 4 Inches long, and almoſt 3 broad in the Middle; they are placed alternately on pretty long Foot Stalks, which have one or two ſhort Spines upon them, as there alſo is upon the Mid-rib of the Leaves. The Flowers come out ſingly upon Foot Stalks from the Side of the Branches, they are white, and are ſucceeded by red ſtriated Fruit, which are firmer than thoſe of the other Sorts, and about the Size of Cherries. This Fruit ripens in the Autumn, and the Plants decay ſoon after.

The 4th Sort is ſomewhat like the firſt, but the Leaves are unequally winged, having ſome ſmaller Lobes placed between the large ones; the Lobes of this are ſhorter, broader, and not cut like thoſe of the firſt, but have ſome obtuſe Indentures toward their Baſe. The Leaves of this Sort have not that rank diſagreeable Odour which the two firſt have; the Fruit of it is not ſo large as thoſe of the firſt, but they are round and ſmooth, and are very late before they ripen here; ſo that unleſs the Plants are raiſed early in the Spring, they will not produce ripe Fruit.

The 5th Sort is alſo annual; this hath a very branching herbaceous Stalk, ſpreading out into many Diviſions, and is not ſo hairy as the two firſt; the Leaves are compoſed of a greater Number of Lobes, which are much ſhorter and more indented on their Edges, where they are a little waved. The Flowers ſtand on very long Foot Stalks, which branch out and ſupport a large Number of Flowers at the Top; theſe have a longer Style than thoſe of the other Species, which is permanent, remaining on the Top of the Fruit. This Sort is late in ripening the Fruit, ſo that unleſs the Plants are raiſed early in the Spring, the Fruit will not ripen in *England*.

The Seeds of theſe two Sorts were ſent from *Peru* by Mr. *Joſeph de Juſſieu*, to the Royal Garden at *Paris*, Part of which was ſent me by his Brother Dr. *Bernard de Juſſieu*, of the *Royal Academy of Sciences*.

The 6th Sort was raiſed by Mr. *James Gordon*, Gardener at *Mile End*, who gave me ſome of the Seeds, but from what Country it came I could not learn. This hath very weak, trailing, ſmooth Stalks, not more than a Foot long, garniſhed with ſmooth Leaves, ſtanding by Pairs oppoſite; theſe are regularly cut on the Sides almoſt to the Mid-rib, in Form of a winged Leaf; and theſe Segments are alſo indented on their Edges, and at their Points. The Flowers come out on the Side of the Stalks ſingly, they are of a whitiſh yellow Colour, and have a pretty large ſpreading Empalement, deeply cut at the Brim into many acute Segments which ſpread open. The Flowers are ſucceeded by ſmall roundiſh Berries a little compreſſed at the Top, of an herbaceous yellow Colour when ripe.

Theſe Plants are propagated by ſowing their Seeds on a moderate hot Bed in *March*, and when the Plants are 2 Inches high, they ſhould be tranſplanted into another moderate hot Bed, at about 4 Inches Diſtance from each other, obſerving to ſhade them until they have taken Root; after which they muſt have frequent Waterings, and a large Share of freſh Air; for if they are too much drawn while young, they ſeldom do well afterwards.

In *May* theſe Plants ſhould be tranſplanted either into Pots filled with rich light Earth, or into Borders near Walls, Pales, or Hedges, to which their Branches may be faſtened to ſupport them from trailing on the Ground, which they otherwiſe will do, and then the Fruit will not ripen, ſo that where theſe Plants are cultivated for the Sake of their Fruit, they ſhould be planted to a warm Aſpect, and the Branches regularly faſtened as they extend, that the Fruit may have the Advantage of the Sun's Warmth to forward them, otherwiſe it will be late in the Seaſon before they are ripe, and they are unfit for Uſe before; but when the Plants are brought forward in the Spring, and thus regularly trained to the South Sun, the Fruit will ripen by the latter End of *July*, and there will be a Succeſſion of it till the Froſt kills the Plants.

Some Perſons cultivate theſe Plants for Ornament, but their Leaves emit a ſtrong offenſive Odour on being touched, which renders them very improper for the Pleaſure Garden, and their Branches extend ſo wide and irregular, as to render them very unſightly, for they cannot be kept within Bounds, eſpecially when they are planted in good Ground; therefore the Borders in which thoſe Plants are placed for their Fruit, muſt not be too rich, for in a moderate Soil they will not be ſo luxuriant and more fruitful.

The *Italians* and *Spaniards* eat theſe Apples, as we do Cucumbers, with Pepper, Oil, and Salt; and ſome eat them ſtewed in Sauces, *&c.* and in Soups they are now much uſed in *England*, eſpecially the ſecond Sort, which is preferred to all the other. This Fruit gives an agreeable Acid to the Soup, though there are ſome Perſons who think them not wholeſome, from their great Moiſture and Coldneſs, and that the Nouriſhment they afford muſt be bad.

The 3d Sort is never uſed either in the Kitchen or for Medicine, but the Plants are preſerved for Variety, eſpecially by thoſe Perſons who are Lovers of Botany. This Sort is propagated by Seeds, which ſhould be ſown on a hot Bed in the Spring, and the Plants afterwards treated as hath been directed for the *Capſicum*, with which this Plant will thrive and produce Plenty of Fruit annually.

The 7th Sort is the common Potatoe, which is a Plant ſo well known now, as to need no Deſcription. Of this there are two Varieties, one with a red and the other with a white Root; that whoſe Roots are red, have purpliſh Flowers, but the white Root has white Flowers; theſe are ſuppoſed to be only accidental Variations, and not diſtinct Species.

The common Name of Potatoe, ſeems to be only a Corruption of the *Indian* Name *Batatas*. This Plant has been much propagated in *England* within thirty Years paſt, for although it was introduced from *America* about the Year 1623, yet it was but little cultivated in *England* till of late; theſe Roots being deſpiſed by the Rich, and deemed only proper Food for the meaner Sort of Perſons; however, they are now eſteemed by moſt People, and the Quantity of them which are cultivated near *London*, I believe, exceeds that of any other Part of *Europe*.

This Plant was always ranged in the Genus of *Solanum*, or Nightſhade, and is now brought under that Title again by Dr. *Linnæus*; but as *Lycoperſicon* has been eſtabliſhed as a diſtinct Genus, on Account of the Fruit being divided into ſeveral Cells, by intermediate Partitions, and as the Fruit of this Plant exactly agrees with the Characters of the other Species of this Genus, I have inſerted it here.

This is always propagated by its Roots, for it rarely perfects Seeds in *England*; and if it did, that Method would be more tedious and uncertain; and as the Roots greatly multiply, if planted in a proper Soil, there can be no Occaſion for trying any other Method of Culture. The common Way is, either to plant the ſmall Roots or Offsets entire, or to cut the larger Roots into Pieces, preſerving a Bud or Eye to each; but neither of theſe Methods is what I would recommend, for when the ſmaller Offsets are planted, they generally produce a greater Number of Roots, but theſe are always ſmall; and the Cuttings of the larger Roots are apt to rot, eſpecially if wet Weather happens ſoon after they are planted; therefore what I would recommend is, to make Choice of the faireſt Roots for this Purpoſe, and to allow them a larger Space of Ground, both between the Rows, as alſo in the Rows, Plant from Plant; by which Method I have obſerved, the Roots have been in general large the following Autumn.

The Soil in which this Plant thrives beſt, is a light ſandy Loam, not too dry or over moiſt; this Ground ſhould be well ploughed two or three Times, in order to break and divide the Parts; and the deeper it is ploughed, the better the Roots will thrive. In the Spring, juſt before the laſt Ploughing, there ſhould be a good Quantity of rotten Dung ſpread on the Ground, which ſhould be ploughed in the Beginning of *March*, if the Seaſon proves mild, otherwiſe it had better be deferred until the Middle or latter End of that Month; for if it ſhould prove hard Froſt after the Roots are planted, they may be greatly injured, if not deſtroyed thereby; but the ſooner they are planted in the Spring, after the Danger of Froſt is over, the better it will be, eſpecially in dry Land. In the laſt Ploughing, the Ground ſhould be laid even, and then the Furrows ſhould be drawn at 3 Feet Diſtance from each other, and about 7 or 8 Inches deep. In the Bottom of this Furrow the Roots ſhould be laid, at about one Foot and a Half aſunder; then the Furrow ſhould be covered in with the Earth, and the ſame continued through the whole Field or Parcel of Land, intended to be planted.

After all is finiſhed, the Land may remain in the ſame State till near the Time when the Shoots are expected to appear above Ground, when the Ground ſhould be well harrowed over both Ways, which will break the Clods, and make the Surface very ſmooth; and by doing it ſo late, it will deſtroy the young Weeds, which, by this Time, will begin to make their Appearance; and this will ſave the Expence of Hoeing, as alſo ſtir the upper Surface of the Ground, which, if much Wet has fallen after the Planting, is often bound into a hard Cruſt, and will retard the Appearance of the Shoots.

As I have allotted the Rows of Potatoes at 3 Feet Diſtance, it was in order to introduce the Hoe Plough between them, which will greatly improve theſe Roots; for by twice ſtirring and breaking the Ground between theſe Plants, it will not only deſtroy the Weeds, but alſo looſen the Ground, whereby every Shower of Rain will penetrate the Ground to the Roots, and greatly improve their Growth; but theſe Operations ſhould be performed early in the Seaſon, before the Stems or Branches of the Plants begin to fall, and trail on the Ground, becauſe after that, it will be impoſſible to do it without injuring the Shoots.

If theſe Ploughings are carefully performed, it will prevent the Growth of Weeds, till the Haulm of the Plants cover the Ground, ſo that afterward there will be little Danger of Weeds growing ſo as to injure the Crop; but as the Plough can only go between the Rows, it will be neceſſary to make uſe of a Hoe to ſtir the Ground and deſtroy the Weeds in the Rows between the Plants; and if this is carefully performed in dry Weather, after the two Ploughings, it will be ſufficient to keep the Ground clean until the Potatoes are fit to take up.

In Places where Dung is ſcarce, many Perſons ſcatter it only in the Furrows where the Roots are planted; but this is a very poor Method, becauſe when the Potatoes begin to puſh out their Roots, they are ſoon extended beyond the Width of theſe Furrows, and the new Roots are commonly formed at a Diſtance from the old; ſo will be out of the Reach of this Dung, and conſequently will receive little Benefit from it. And as moſt of the Farmers covet to have a Crop of Wheat after the Potatoes are taken off the Ground, the Land will not be ſo thorougly dreſſed in every Part, nor ſo proper for this Crop, as when the Dung is equally ſpread, and ploughed in all over the Land, nor will the Crop of Potatoes be ſo good. I have always obſerved, where this Method of planting the Potatoes has been practiſed, the Land has produced a fine Crop of Wheat afterward, and there has ſcarce one Shoot of the Potatoe appeared among the Wheat, which I attribute to the Farmers planting only the largeſt Roots; for when they have forked them out of the Ground the following Autumn, there have been 6, 8, or 10 large Roots produced ſoom each, and often many more, and ſcarce any very ſmall Roots; whereas, in ſuch Places where the ſmall Roots have been planted, there has been a vaſt Number of very ſmall Roots produced; many of which were ſo ſmall, as not to be diſcovered when the Roots were taken up; ſo have grown the following Seaſon, and have greatly injured whatever Crop was on the Ground.

The Haulm of theſe Potatoes is generally killed by the firſt Froſt in the Autumn, when the Roots ſhould be taken up ſoon after, and may be laid up in Sand in any ſheltered Place, where they may ke kept dry, and ſecure from Froſt. Indeed the People who cultivate theſe Roots near *London*, do not wait for the decaying of the Haulm, but begin to take up Part of them as ſoon as their Roots are grown to a proper Size for the Market; and ſo keep taking up from Time to Time, as they have Vent for them. There are others likewiſe, who do not take them up ſo ſoon as the Haulm decays, but let them remain much longer in the Ground; in which there is no Hurt done, provided they are taken up before hard Froſt ſets in, which would deſtroy them, unleſs where the Ground is wanted for other Crops; in which Caſe, the ſooner they are taken up the better, after the Haulm is decayed. When theſe Roots are laid up, they ſhould have a good Quantity of Sand or dry Earth laid between them, to prevent their heating; nor ſhould they be laid in two large Heaps, for the ſame Reaſon.

LYCOPUS commonly called Water Horehound.

This Plant grows in great Plenty on moiſt Soils by the Sides of Ditches, in moſt Parts of *England*, but is never cultivated in Gardens, ſo that it would be needleſs to ſay any Thing more of it in this Place.

LYSIMACHIA. *Tourn. Inſt. R. H.* 141. *Tab.* 59. *Lin. Gen. Pl.* 188. Looſtrife; in *French*, *Corneille*.

The *Characters* are,

The Empalement of the Flower is permanent, and cut into 5 *acute Segments which are erect. The Flower is of* 1 *Petal, cut into* 5 *oblong oval Segments to the Bottom, which ſpread open flat. It hath* 5 *Awl-ſhaped Stamina about half the Length of the Petal, terminated by acute-pointed Summits. In the Center is ſituated a roundiſh Germen, ſupporting a ſlender Style the Length of the Stamina, crowned by an obtuſe Stigma. The Germen turns to a globular Capſule with* 1 *Cell opening with* 10 *Valves, and filled with ſmall angular Seeds.*

The *Species* are,

1. LYSIMACHIA *paniculata, racemis terminalibus. Lin. Sp. Pl.* 146. Paniculated Looſtrife with Bunches of Flowers terminating the Stalks. *Lyſimachia lutea, major, quæ Dioſcoridis. C. B. P.* 245. Greater yellow Looſtrife of *Dioſcorides*.

2. LYSIMACHIA *racemis lateralibus pedunculatis. Lin. Sp. Plant.* 147. Looſtrife with lateral Bunches of Flowers growing on Foot Stalks. *Lyſimachia bifolia, flore globoſo, luteo. C. B. P.* 242. Two leaved Looſtrife with a yellow globular Flower.

3. LYSIMACHIA *ſpicis terminalibus patulis, lanceolatis, ſtaminibus corollâ longioribus. Lin. Sp. Pl.* 147. Looſtrife with Spear-ſhaped ſpreading Spikes of Flowers terminating the Branches, and Stamina longer than the Petals. *Lyſimachia Orientalis anguſtifolia flore purpureo. Tourn. Cor.* 7. Narrow leaved Eaſtern Looſtrife, with a purple Flower.

4. LYSIMACHIA *racemis ſimplicibus terminalibus, petalis obtuſis, ſtaminibus corollâ brevioribus. Lin. Sp. Pl.* 146. Looſtrife with Spikes of Flowers terminating the Stalks, obtuſe Petals to the Flower, and Stamina ſhorter than the Petal. *Lyſimachia Orientalis minor, folijs glaucis, annuentibus, flore purpureo. Hort. Piſſ.* Smaller Eaſtern annual Looſtrife, with nodding grayiſh Leaves, and a purple Flower.

5. LYSIMACHIA *petiolis ciliatis, floribus cernuis. Lin. Sp. Plant.* 147. Looſtrife with hairy Foot Stalks and nodding Flowers. *Lyſimachia Canadenſis, Jalappæ foliis. Sarr. Canad. Canada* Looſtrife with a Jalap Leaf.

6. LYSIMACHIA *ſpicâ ſimplici erecto terminali, petalis ovatis, ſtaminibus corollâ longioribus.* Looſtrife with a ſingle erect Spike terminating the Stalk, oval Petals, and Stamina longer than the Flower. *Lyſimachia ſpicata, flore albo, ſalicis folio. Tourn. Inſt. R. H.* 141. Looſtrife with a Spike of white Flowers, and a Willow Leaf.

7. LYLIMACHIA *foliis ſubcordatis, floribus ſolitariis, caule repente. Vir. Cliff.* 13. Looſtrife with Leaves nearly Heart-ſhaped, flowers growing ſingly, and a creeping Stalk. *Nummularia lutea major, C. B. P.* 309. Greater yellow Moneywort.

8. LYSIMACHIA *foliis ovatis acutiuſculis, pedunculis folio longioribus, caule repente. Lin. Sp. Pl.* 148. Looſtrife with oval acute-pointed Leaves, Foot Stalks longer than the Leaf, and a creeping Stalk. *Nummularia minor purpuraſcente, flore. C. B. P.* 310. Smaller Money-wort with a purpliſh Flower.

9. LYSIMACHIA *foliis ovatis, acutis, floribus ſolitariis, caule procumbente. Hort. Cliff.* 52. Looſtrife with oval acute-pointed Leaves, Flowers growing ſingly, and a trailing Stalk. *Anagallis lutea nemorum. C. B. P.* 252. Yellow Pimpernel of the Woods.

10. LYSIMACHIA *foliis ſubquaternis, pedunculis verticillatis unifloris. Lin. Sp. Pl.* 147. Looſtrife with Leaves generally placed by Fours, and Foot Stalks placed in Whorls round the Stalks, each ſuſtaining a ſingle Flower. *Lyſimachia lutea minor, foliis nigris punctatis notatis, C. B. P.* 245. Smaller yellow Looſtrife with Leaves marked with black Spots.

The 1ſt Sort grows by the Side of Ditches and Rivers in many Parts of *England*, ſo is not often admitted into Gardens, becauſe the Roots creep far in the Ground, and ſend up Stalks at a great Diſtance, whereby it becomes often a troubleſome Plant, otherwiſe for the Variety of its Flowers, it might deſerve a Place in large Gardens, eſpecially in moiſt Places, where better Things will not thrive. It riſes with upright Stalks from 2 to 3 Feet high, garniſhed with ſmooth Spear-ſhaped Leaves placed ſometimes by Pairs oppoſite, at others there are three, and frequently 4 of theſe Leaves placed round the Stalk at each Joint. The upper Part of the Stalk divides into ſeveral Foot Stalks, which ſuſtain yellow Flowers growing in a Panicle; theſe have 1 Petal deeply cut into 5 Segments, ſpreading open. Theſe appear in *June* and *July*, and are ſucceeded by roundiſh Seed Veſſels, filled with ſmall Seeds which ripen in Autumn. This is placed in the Liſt of medicinal Plants. If the Roots of this Plant are taken up from the Places where it grows naturally in the Autumn, and planted in a moiſt Soil, they will thrive faſt enough without Care.

The 2d Sort grows naturally in the northern Parts of *England*; this hath a perennial creeping Root, which ſends up ſeveral erect Stalks near a Foot and a Half high, garniſhed at every Joint by two pretty long narrow Leaves placed oppoſite, whoſe Baſe ſits cloſe to the Stalk; they are about 3 Inches long, and more than half an Inch broad toward their Baſe, leſſening gradually to the End, which terminates in acute Points; the Foot Stalks of the Flowers come out by Pairs oppoſite on each Side of the Stalks, they are an Inch long, ſuſtaining at their Top a globular or oval Thyrſe of yellow Flowers, whoſe Stamina are much longer than the Petals. This flowers at the ſame Time with the former Sort, but ſeldom produces Seeds, for the Roots creep ſo much as to render it barren. It is but ſeldom kept in Gardens for the ſame Reaſon as the former is rejected, but thoſe who are deſirous to have it may procure the Roots and plant them in a moiſt Soil, where it will ſoon ſpread.

The 3d Sort is a biennial Plant, which was diſcovered by Dr. *Tournefort* in the *Levant*, from whence he ſent the Seeds to the Royal Garden at *Paris*, where they ſucceeded, and many of the *European* Gardens have ſince been furniſhed with it. This riſes with an upright Stalk about a Foot high, garniſhed with Spear-ſhaped Leaves ending in acute Points; theſe are placed by Pairs oppoſite, they are ſmooth, and of a lucid green. The Flowers grow in a looſe Spike, terminating the Stalks; the Flowers ſtand horizontally, ſpreading out on each Side the Stalk; they have longer Tubes than the other Species, and are of a purple Colour. Theſe appear in *June*, and the Seeds ripen in *September*, ſoon after which the Plants decay.

It is propagated by Seeds, which ſhould be ſown in Autumn ſoon after they are ripe, and from thoſe the Plants will come up the following Spring; but if the Seeds are kept out of the Ground till Spring; they will not vegetate till the Year after. When the Plants come up, they muſt be kept clean till Autumn, then they may be planted into the Borders of the Pleaſure Garden, where they will flower and produce ripe Seeds the following Summer.

The 4th Sort is an annual Plant, which grows naturally in the *Levant*; this hath a ſhorter Stalk than the former. The lower Leaves are broader, the Spikes of Flowers ſhorter, and of a paler purple Colour. It flowers the Beginning of *July*, and the Seeds ripen in *September*. The Seeds of this Sort ſhould be ſown early in Spring, in the Place where the Plants are to remain, and when they come up, they will require no other Culture, but to keep them clean from Weeds, and if the Plants come up cloſe, they ſhould be thinned to the Diſtance of 4 or 5 Inches, which is all the Culture they will require.

The 5th Sort was firſt brought from *Canada*, where it grows naturally; this has a perennial creeping Root, ſending up many erect Stalks, about 2 Feet high, garniſhed with oblong, oblique, ſmooth Leaves, placed by Pairs, oppoſite; theſe are veined on their under Side, and end in acute Points. The Flowers are produced from the Wings of the Stalks, each ſitting on a long ſlender Foot Stalk; there are 3 or 4 of theſe ariſing from the ſhort Branches, which come out on each Side the Stalk, at all the upper Joints. The Flowers are like thoſe of the firſt Sort, but ſmaller; theſe appear in *June* and *July*, but are ſeldom ſucceeded by any Seeds in *England*.

This Sort ſpreads and propagates by Roots, in as great Plenty as the firſt, and is equally hardy, ſo requires no other Culture.

The 6th Sort grows naturally in *Spain*; this hath a perennial Root from which ariſe ſeveral upright Stalks, upward of 2 Feet high, garniſhed with narrow, ſmooth, Spear-ſhaped Leaves, which ſtand oppoſite, and at the Baſe of theſe come out ſhort Side Branches, garniſhed with ſmall Leaves of the ſame Shape. The Flowers are produced in a long, cloſe, upright Spike. at the Top of the Stalk; they are cut into 5 oval Segments, which are white, ſpreading open, and the Stamina ſtand out longer than the Petal. It flowers in *June*, and the Seeds ripen in Autumn.

This is the fineſt Species of this Genus, and as the Roots of it do not ſpread like thoſe of the other, deſerves a Place in the Pleaſure Garden, where it is a very ornamental Plant for ſhady Borders. It loves a moiſt Soil and a ſhady Situation, where it will continue long in Beauty. It may be propagated by parting the Roots in Autumn, but by this Method it increaſes ſlowly, ſo that the only Way to have it in plenty, is by ſowing the Seeds; theſe ſhould be ſown on an Eaſt-aſpected Border in Autumn, ſoon after they are ripe, then the Plants will come up the following Spring, but thoſe which are ſown in the Spring, will not grow the ſame Year. When the Plants come up, they ſhould be kept clean from Weeds, and if they are too cloſe, ſome of them may be drawn out and tranſplanted on a ſhady Border, which will give the remaining Plants Room to grow till Autumn, when they may be tranſplanted into the Borders of the Flower Garden, where they are deſigned to flower; after which they will require no other Culture, but to keep them clean from Weeds, and dig the Ground between them every Spring.

The 7th Sort is commonly called, Moneyworth, or Herb Two-pence; this is a perennial Plant, which grows naturally in moiſt ſhady Places, in moſt Parts of *England*, ſo is not cultivated in Gardens. The Stalks of this trail on the Ground, and put out Roots, by which it ſoon ſpreads to a great Diſtance. The Leaves are almoſt Heart-ſhaped, and placed by Pairs. The Flowers come out ſingly from the Side of the Stalks; they are yellow, appearing in *June* and *July*.

The 8th Sort is a ſmall trailing Plant, which grows on Bogs in moſſy Places, in moſt Parts of *England*, but cannot be cultivated on dry Ground. The Stalks ſeldom are more than 3 or 4 Inches long, and are terminated by 3 or 4 ſmall Flowers, of a bright purple Colour, growing in a Bunch. This flowers in *June*, but is never planted in Gardens.

The 9th Sort is a perennial Plant, with trailing Stalks, which grows naturally in moiſt Woods, in moſt Parts of *England*, ſo is not cultivated in Gardens. The Leaves ſtand oppoſite by Pairs, at each Joint; they are ſmooth, oval, and acute-pointed. The Flowers come out ſingly from the Side of the Stalk, on long Foot Stalks; they are yellow, and ſpread open like the Flowers of Chickweed. This flowers in *May* and *June*, and the Seeds ripen in Autumn.

The 10th Sort grows naturally among Ruſhes and Reeds, by the River's Side in *Holland*; this hath a perennial creeping Root like the firſt. The Stalks riſe a Foot high; they are ſlender, and are garniſhed by Spear-ſhaped Leaves, an Inch and a Half long, and a Quarter of an Inch broad in the Middle, placed ſometimes by Pairs, at others by Threes, and often 4 at each Joint, ſurrounding the Stalk. The Flowers alſo come out at each Joint, 4 of them ſtanding round the Stalk in Whorls, each having a diſtinct ſlender Foot Stalk, an Inch long. The Flowers are ſmall and yellow; they appear in *June*, and are ſucceeded by Seeds, which ripen in Autumn; it may be treated as the firſt Sort, and is equally hardy.

LYSIMACHIA GALERICULATA. *See* Scutellaria.

LYSIMACHIA NON PAPPOSA. *See* Œnothera.

LYSIMACHIA SILIQUOSA. *See* Epilobium.

LYTRUM. *Lin. Gen. Pl.* 532. *Salicaria. Tourn. Inſt. R. H.* 253. *Tab.* 129. Willow Herb, or purple Looſtriſe.

The *Characters* are,

The Flower hath a cylindrical ſtriated Empalement of 1 *Leaf, indented at the Brim in* 12 *Parts, which are alternately ſmaller. It has* 6 *oblong blunt Petals, which ſpread open, whoſe Tails are inſerted in the Indentures of the Empalement, and* 10 *ſlender Stamina the Length of the Empalement, the upper being ſhorter than the lower, terminated by ſingle riſing Summits. In the Center is ſituated an oblong Germen, ſupporting an Awl-ſhaped declining Style, crowned by a riſing orbicular Stigma. The Germen afterward turns to an oblong acute Capſule with* 2 *Cells filled with ſmall Seeds.*

The *Species* are,

1. LYTHRUM *foliis oppoſitis cordato-lanceolatis, floribus ſpicatis dodecandriis. Lin. Sp. Pl.* 446. *Lythrum* with Heart-Spear-ſhaped Leaves, placed oppoſite, and Flowers growing in Spikes, having 12 Stamina. *Salicaria vulgaris, purpurea, foliis oblongis. Tourn. Inſt. R. H.* 253. Common purple Willow Herb with oblong Leaves.

2. LYTHRUM *foliis cordato-ovatis, floribus verticillato-ſpicatis tomentoſis. Lythrum* with oval Heart-ſhaped Leaves, and Flowers growing in whorlly Spikes, which are woolly. *Salicaria purpurea, foliis ſubrotundis. Tourn. Inſt. R. H.* 253. Purple Willow Herb with roundiſh Leaves.

3. LYTHRUM *foliis alternis linearibus, floribus hexandriis. Hort. Upſal.* 118. *Lythrum* with linear alternate Leaves, and Flowers having 6 Stamina. *Salicaria hyſſopi folio anguſtiore. Tourn. Inſt. R. H.* 253. Willow Herb with a narrow Hyſſop Leaf.

4. LYTHRUM *foliis lanceolatis ternis glabris, floribus ſpicatis decandris. Lythrum* with ſmooth Spear-ſhaped Leaves, placed by Threes, and Flowers growing in Spikes, which have 10 Stamina. *Salicaria Luſitanica, anguſtiore folio. Tourn. Inſt. R. H.* 253. *Portugal* Willow Herb with a narrower Leaf.

5. LYTHRUM *foliis oblongo-ovatis infernè oppoſitis, ſupernè alternis, floribus hexandris. Lythrum* with oblong oval Leaves, oppoſite below, but above alternate, and Flowers having 6 Stamina. *Salicaria Hiſpanica, hyſſopifolia, floribus oblongis ſaturatè cæruleis. Tourn. Inſt.* 253. *Spaniſh* Willow Herb with a Hyſſop Leaf, and oblong deep blue Flowers.

6. LYTHRUM *foliis oblongo-ovatis oppoſitis, floribus tetrapetalis. Lythrum* with oblong oval Leaves, placed oppoſite, and Flowers having 4 Petals. *Salicaria hyſſopi folio latiore. Tourn. Inſt. R. H.* 253. Willow Herb with a broader Hyſſop Leaf.

7. LYTHRUM *foliis oppoſitis, ſubtus tomentoſis ſubpetiolatis, floribus verticillatis lateralibus. Lin. Sp. Pl.* 446. Willow Herb with oppoſite Leaves, woolly on their under Side, and Flowers growing in Whorls round the Stalks.

8. LYTHRUM *foliis oppoſitis linearibus petiolatis, floribus dodecandris. Lin. Sp. Pl.* 446. Willow Herb with linear Leaves, placed oppoſite, having Foot Stalks, and Flowers with 12 Stamina.

9. LYTHRUM *foliis oppoſitis linearibus, floribus oppoſitis hexandris. Lin. Sp. Pl.* 447. Willow Herb with linear oppoſite Leaves, and Flowers having 6 Stamina, placed oppoſite.

10. LYTHRUM *foliis oblongo-ovatis infernè oppoſitis ſupernè alternis, floribus hexandris, caule erecto.* Willow Herb with oblong oval Leaves, placed oppoſite below, and above alternate, with Flowers having 6 Stamina, and an erect Stalk. *Salicaria Americana, hyſſopi folio latiore, floribus minimis. Houſt. Mſſ. American* Willow Herb with a broader Hyſſop Leaf, and very ſmall Flowers.

The 1ſt Sort grows naturally by the Side of Rivers and Ditches, in moſt Parts of *England.* It has a perennial Root, from which come forth ſeveral upright angular Stalks, which riſe from 3 to 4 Feet high; they are of a purple Colour, and garniſhed with oblong Leaves, placed ſometimes by Pairs, oppoſite; at others there are 3 Leaves at each Joint, ſtanding round the Stalk. The Flowers are produced in a long Spike at the Top of the Stalk; they are of a fine purple Colour, and make a fine Appearance. This flowers in *July*, and the Seeds ripen in Autumn; although this Plant is deſpiſed, becauſe it grows common, yet it merits a Place in Gardens, better than many other which are propagated with Care, becauſe they are more rare. It is eaſily cultivated by parting the Roots in Autumn, and ſhould be planted in a moiſt Soil, where it will thrive and flower without any other Care than the keeping it clean from Weeds.

There is a Variety of this with an hexangular Stalk, and generally with 3 Leaves at each Joint, but this is only accidental, for the Roots of this, when removed into a Garden, come to the common Sort.

The 2d Sort hath perennial Roots like the firſt, from which come out upright branching Stalks, 3 Feet high, garniſhed with oval Heart-ſhaped Leaves about one Inch long, and three Quarters of an Inch broad; they are downy, and placed by Threes round the Stalk. The Flowers are produced in long Spikes at the Top of the Stalks, but they are diſpoſed in thick Whorls, with Spaces between each; they are of a fine purple Colour, and appear at the ſame Time with the former. This may be propagated as the firſt Sort, and is equally hardy.

The 3d Sort grows naturally on moiſt Bogs in many Parts of *England*, ſo is ſeldom admitted into Gardens; this has a perennial Root, ſending up 2 or 3 branching Stalks, about a Foot high, garniſhed with narrow Leaves, placed alternate. The upper Part of the Stalk is garniſhed with Flowers, which come out from the Side, ſingly at each Joint, ſtanding cloſe to the Baſe of the Leaves; they are ſmall, and of a light purple Colour, appearing in *June*, and the Seeds ripen in Autumn.

The 4th Sort grows naturally in *Spain* and *Portugal*, in moiſt Places by the Side of Waters; this has a perennial Root, and Stalks like the firſt, which ſeldom grow more than 3 Feet high, garniſhed with narrower and ſhorter Leaves than the firſt, which are ſmooth, and placed by Threes round the Stalk. The Flowers grow in Spikes at the Top of the Stalks; they are of a light purple Colour, and appear in *July*. The Seeds ripen in Autumn. This Sort is hardy, and may be propagated as the firſt.

The 5th Sort grows naturally in *Spain* and *Portugal*, from both which Couutries I have received the Seeds. The Root of this is perennial. The Stalks are ſlender, not more than 9 or 10 Inches long, ſpreading out on every Side. The lower Part of the Stalks are garniſhed with oblong oval Leaves, placed oppoſite. On the upper Part of the Stalks, the Leaves are narrower, and placed alternate. The Flowers come out ſingly from the Side of the Stalks at each Joint; they are larger than thoſe of the common Sort, and of a deeper purple Colour, ſo make a fine Appearance in *July*, when they are in Beauty.

This Sort has never produced any Seeds in *England*, and the ſevere Winter in 1740, killed all the Plants here, ſince which Time I have not ſeen any of the Plants in the *Engliſh* Gardens.

The 6th Sort grows naturally on the *Alps*, and other mountainous Parts of *Italy*; it was ſent me from *Verona*, near which Place it grows in Plenty. It hath a perennial Root, ſending out a few ſmall Stalks, 5 or 6 Inches long, garniſhed with ſmall, oblong, oval Leaves, placed oppoſite. The Flowers are ſmall, of a light purple Colour, and come out ſingly from the Wings of the Stalk; theſe appear in *June*, and the Seeds ripen in Autumn.

The 7th Sort grows naturally in the northern Parts of *America*; this riſes with a ſtiff branching Stalk, a Foot and a Half high, garniſhed with oblong Leaves, which are downy, and placed oppoſite, ſtanding on very ſhort Foot Stalks. The Flowers are produced in Whorls round the Stalks; they are of a pale purple Colour, and appear in *July*; theſe are ſucceeded by Capſules with two Cells, filled with Seeds which ripen in Autumn.

The 8th Sort grows naturally in *Virginia*, from whence I received the Seeds; this riſes with an upright woolly Stalk, near 2 Feet high, garniſhed with linear Leaves, placed oppoſite on Foot Stalks. The Flowers come out from the Wings of the Stalks ſingly; they are ſmall, tubulous, and of a pale purple Colour, ſo make no great Appearance; theſe appear in *July*, and in warm Seaſons perfect Seeds; but the Roots of this Sort increaſe ſo faſt, as to render the propagating of the Plants by Seeds unneceſſary, when once obtained.

The 9th Sort grows naturally in *North America*. It has a perennial Root. The Stalks are ſlender, about a Foot high, garniſhed with linear Leaves, placed oppoſite, which are entire. The Flowers come out ſingly from the Wings of the Leaves, on the upper Part of the Stalks; they are ſmall, white, and have 6 Petals. The Empalement is ſtreaked, and cut at the Top into 6 Parts, and the Flower has 6 Stamina. This flowers in *June*, and the Seeds ripen in Autumn.

The 10th Sort was diſcovered by the late Dr. *Houſtoun*, at *La Vera Cruz*, growing in Swamps, where the Water had ſtagnated. This hath a ligneous Root, from which ariſe 2 or 3 ſlender Stalks, upward of 2 Feet high, garniſhed with oblong, oval, ſmooth Leaves, which, on the lower Part of the Stalks, are oppoſite, but thoſe on the upper Part are narrower and alternate. The Flowers come out from the Wings of the Leaves, on the upper Part of the Stalk ſingly; they are ſmall and white, having ſix Petals, and ſix Stamina; theſe do not appear till the ſecond Year from Seed, and have not produced any good Seeds in *England*.

This Sort is tender, ſo will not live in the open Air in *England*. It is propagated by Seeds, which ſhould be ſoon in Pots, and plunged into an old hot Bed the firſt Seaſon, for the Seeds never riſe the firſt Year, unleſs they are ſown in Autumn; the Pots ſhould be ſheltered in Winter, and the Spring following placed on a hot Bed to bring up the Plants; theſe muſt be treated as other tender Plants from the ſame Country.

All the other Sorts, when raiſed from Seeds, ſhould be ſown in Autumn, otherwiſe the Seeds will remain a Year in the Ground, ſo that thoſe Seeds which are brought from *America*, never grow the ſame Year they are ſown, for which Reaſon the Ground ſhould not be diſturbed, but left till the following Spring, when the Plants will come up if the Seeds were good.

The End of VOL. I.